CHALLENGES AND STRATEGIES FOR SUPPORTING SLOW LEARNERS IN MATHEMATICS: A SYSTEMATIC REVIEW

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Abstract: *This research paper presents a comprehensive and systematic review of the literature on slow learners in the context of mathematics education, with a particular focus on studies published between 2013 and 2023. The growing prevalence of learning disabilities, particularly in mathematics, underscores the necessity for targeted educational strategies for students diagnosed with mathematics learning disabilities, which are estimated to affect 4-10% of students. The term "slow learner" is used to describe students with a below-average intelligence quotient (i.e., 70-90 IQ), who experience difficulties in tasks that require abstract thinking, conceptualisation, and symbolic processing. These students often display challenges in maintaining attention, working memory, and motivation. Notwithstanding their difficulties, slow learners frequently fail to receive the specialised support that is necessary to address their educational needs. The study identifies and analyses the key themes and participant characteristics present in research on slow learners in mathematics. The literature review revealed that the majority of studies focus on elementary school students, which is reflective of the early onset of mathematical learning difficulties. Furthermore, the analysis indicates a notable emphasis on the identification and characteristics of slow learners, as well as the strategies employed to enhance their mathematical competencies. It is noteworthy that strategies for teaching slow learners are extensively explored, including differentiated instruction and personalised learning approaches, which are critical for addressing the unique challenges these students face. The findings of this review underscore the need for more research and educational interventions tailored to slow learners in mathematics. By systematically analysing studies over the last decade, this paper provides valuable insights into the characteristics, task types, and thematic focus of research on slow learners, offering a foundation for future studies aimed at improving educational outcomes for this vulnerable student population.*

Keywords: *learning disabilities, mathematics education, slow learners, systematic literature review, instructional strategies*

INTRODUCTION

At the present time, learning disabilities are more prevalent than any other disability among students (Judge & Watson, 2011). It is estimated that between 4-10% of students' populations are diagnosed with mathematical learning disabilities (Butterworth & Kovas, 2013; Geary, 2011; Shalev, 2007). Children diagnosed with mathematical learning difficulties at school tend to lag behind their peers (Zhang et al., 2021). Furthermore, it is imperative to acknowledge the significance of slow learners, who often encounter difficulties in meeting the demands of the subject, yet are frequently overlooked by educators (Borah, 2013; Mundia, 2017).

The term 'slow learners' is used in international literature to describe a range of learners who may require additional support to achieve at the expected level. These learners are often referred to by various terms, including 'mentally disabled' (UNESCO, 2023), 'low achievers' (Nicholas & Fletcher, 2017), 'learners at risk', 'students with learning difficulties' (Mundia, 2017), and 'students with academic backwardness' (Krishnakumar et al., 2006). Slow learners can be identified based on their intelligence quotient (IQ) falling within the range of 70 to 90 points (Al-Mahdi & Abudul-Rahman, 2020; Listiawati et al., 2023). Students who are considered slow learners tend to experience difficulties, particularly when confronted with tasks that require an understanding

of abstract, conceptual, and symbolic components (Tran et al., 2019).

Moreover, individuals with difficulties in mathematics who struggle to learn at an average pace encounter difficulties in receiving instruction, processing working memory, and maintaining attention (Yuwono et al., 2021). Despite exhibiting below-average performance in comparison to their counterparts, slow learners often lack access to special education services due to the heterogeneous nature of their cognitive impairments (Malik et al., 2012; Baglio et al., 2016). It is therefore essential to examine the characteristics of students with slow learning abilities and the features of mathematics assignments at different educational levels in order to assist underperforming pupils and help them catch up with their peers.

A substantial body of research has been conducted on the topic of mathematics education and slow learners. These studies have explored a number of different areas to some extent. For example, Tran et al. (2019) conducted a study that identified slow learners and elucidated their cognitive and behavioural characteristics, learning styles, learning strategies, school and home contexts, learning needs, as well as the extent to which these needs were met by classroom instruction. Another study examined effective strategies for enhancing mathematical proficiency, particularly among slow learners, through the utilisation of Realistic Mathematics Education (RME) principles that align with their distinctive characteristics and requirements (Listiawati et al., 2023).

The term "slow learner" was first introduced in 1937 by Cyril Burt, a professor of psychology at the University of London, to describe children who experience difficulties in engaging in activities that require a certain level of intelligence. Subsequently, this term has been frequently adopted by educators and professionals in the field of education to refer to students who encounter cognitive difficulties and have capabilities that fall below the average of their peers (Farooq & Aslam, 2013; Yusha'u, 2012). A child's tendency to learn at a slower pace may be attributed to a number of factors, including heredity, insufficient brain development due to a lack of stimulation, limited motivation, attention deficits, behavioural issues, a cultural background that differs from the prevailing one in school, or the presence of disruptive personal problems (Reddy et al., 2006; Mohammad & Mahmoud, 2014). Moreover, individuals with this form of learning difficulty display a range of traits, including inattention, distractibility, disorganisation, procrastination, forgetfulness, and fatigue. Nevertheless, they exhibit minimal to no indications of hyperactivity or impulsivity (Quinn, 1994).

Individuals with learning difficulties in mathematics typically exhibit an IQ range below the mean (70-90), demonstrate a lack of motivation to learn mathematics, and display negative attitudes towards themselves and the educational environment. They frequently experience mental health issues that impede their academic achievements, while simultaneously generating feelings of depression, anxiety, loneliness, and shame. Furthermore, they experience difficulties in maintaining concentration for more than twenty minutes, necessitating frequent alterations to the educational environment (Al-Mahdi & Abdul-Rahman, 2020). Individuals with slower learning abilities encounter difficulties when manipulating similarities or differences, engaging in logical and rational thinking, identifying relationships, and employing critical reasoning skills (Vasudevan, 2017). In addition, these individuals encounter difficulties in focusing on specific tasks, maintaining consistent reading ability, achieving long-term goals, and comprehending abstract concepts (Brennan, 2018). In this context, the term "slow learners" is used to describe students who have demonstrated limited proficiency in mathematics, exhibiting difficulties in mathematical reasoning, critical thinking, and memory capacity. External factors, such as motivation and interest in learning, have previously been identified as significant influences on slow learners.

In light of the plethora of studies on students with difficulties in mathematics that adopt disparate approaches, it is imperative to collate and gain a deeper comprehension of the research outcomes. Accordingly, this paper seeks to conduct a comprehensive review of literature focusing on

slow learners in mathematics conducted during the last decade.

This paper sets out to investigate two research questions:

1. What are the specific characteristics of the participants in studies on slow learners, and what are the characteristics of tasks used to help those who find mathematical concepts challenging?

2. What themes are commonly present in studies conducted on slow learners in mathematics?

The findings of this systematic literature review will facilitate a more nuanced comprehension of the characteristics of slow learners in mathematics and the extent to which each research focus has been examined.

METHODOLOGY

A systematic literature review was conducted with the objective of retrieving data in a systematic manner and determining participant characteristics, task characteristics, and research themes that are relevant to the field of mathematics education and slow learners. To guarantee the objectivity and accuracy of the findings, a series of assessments were conducted. The relevant articles were identified using a search strategy that employed keywords from the UNESCO Thesaurus across the SCOPUS, SpringerLink, and Taylor & Francis Online Journals databases. The PRISMA 2020 flow diagram for systematic reviews and meta-analysis were employed (Page et al., 2021), and specific inclusion and exclusion criteria were established to identify the articles for analysis. The PRISMA approach is transparent and rigorous, facilitating the accurate evaluation and analysis of evidence, thus reducing the likelihood of bias and error, while increasing the reliability and validity of the findings (Su et al., 2023).

Search strategy

A comprehensive literature search was conducted on 9 November 2023. The researcher identified relevant articles pertaining to students with mathematics learning difficulties by utilising search strings that included the use of asterisks and Boolean operators. The search strategy, outlined in Table 1, provides a detailed account of the specific search terms employed.

Table 1. *Search strings used to identify relevant articles for systematic review on slow learners in mathematics*

Database	**Search items**
Scopus	(TITLE-ABS-KEY (“slow learners” OR “low achievers” OR “learning disabilities” OR “mentally disabled”) AND TITLE-ABS-KEY (mathematics education) Refined by: (LIMIT-TO (SUBJAREA, ”MATH”) OR (SUBJAREA, “SOCI”) AND (LIMIT-TO (LANGUAGE, “English”) AND (PUBYEAR > 2013 AND PUBYEAR < 2024)
SpringerLink	Title: ‘slow learners OR low achievers OR learning disabilities OR mentally disabled AND math*’ Content type: Article, Discipline: Education, Subdiscipline: Education, general
Taylor & Francis Online Journals	[[Publication Title: “slow learners”] OR [Publication Title: “low achievers”] OR [Publication Title: “learning disabilities”] OR [Publication Title: “mentally disabled”]] AND [All: math*] AND [All Subjects: Education] AND [Article Type: Article] AND [Publication Date: (01/01/2013 TO 12/31/2023)]
Identification results from the databases	**SpringerLink: 53, Taylor and Francis: 111, Scopus: 113, Total: 277 article**s

Selection process

A systematic review was conducted to explore the literature on mathematics education and slow learners, employing a priority screening method. All articles that were not published in English were excluded from the review, and all studies conducted at every level of mathematics education were included in the search. The period under consideration was articles published between 2013 and 2023. In total, five inclusion and five exclusion criteria were employed, as listed in Table 2, in order to ascertain the suitability of publications for evaluation.

Table 2. *Inclusion and exclusion criteria*

Inclusion	Exclusion
Articles published between 2013-2023	Articles published before 2013
Written in English	Written in another language
Peer-reviewed journal article	Article which is not from a journal
Empirical study in mathematics learning or mathematics education	Study in another field or literature review
Focus on slow learners or in the context of slow learners	Focus on others (e.g., those diagnosed with autism or other disorders)

Data collection process

The process of selecting the articles was conducted in three stages: identification, screening, and inclusion (Page et al., 2021). In the identification phase, a literature search was conducted in three separate databases using the search terms provided in Table 1; this resulted in the identification of 277 articles. To ensure the accuracy and consistency of the references, bibliographic software was employed for the organisation and removal of any duplicate entries. The "refine" and "limit to" functions in the electronic databases were employed to exclude publications based on pre-defined exclusion criteria, subsequent to the removal of duplicated information. Subsequently, we undertook an independent examination of 272 studies with the potential to be relevant, prior to subjecting them to a manual screening process.

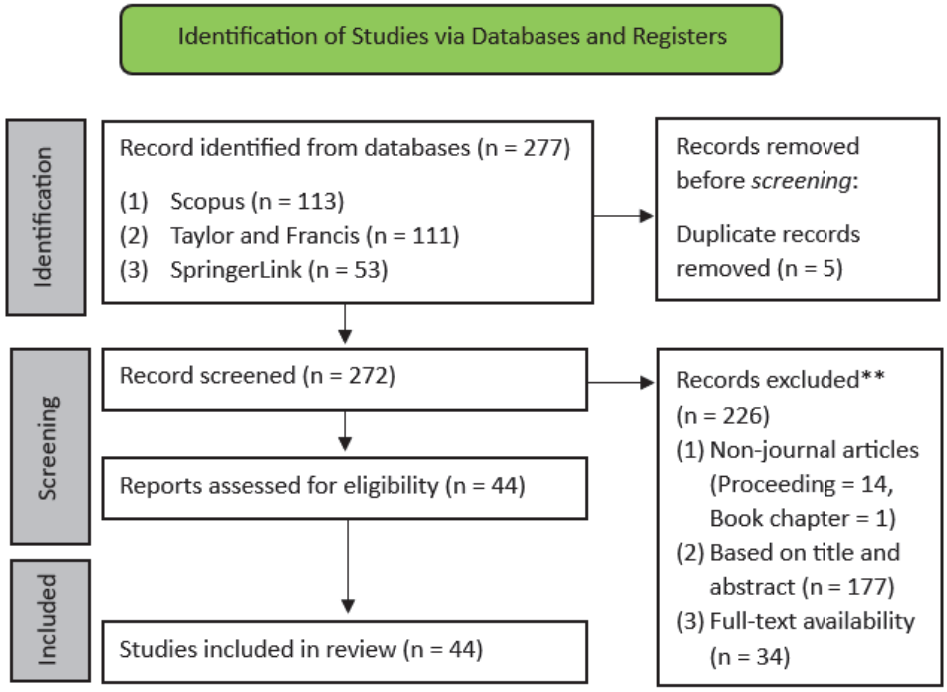

Figure 1. *Flowchart depicting study selection process*

Data analysis process

At the end of the screening process, the research team included 44 relevant articles in the systematic review. Figure 1 presents a flowchart delineating the process of manuscript selection. In order to conduct this review, data pertaining to slow learners and mathematics education were extracted by an independent reviewer and subsequently verified by another researcher from the team. This process was undertaken in order to examine existing literature in the field.

RESULTS AND DISCUSSION

This section presents an objective overview of research on students with slow learning abilities, including an analysis of the study characteristics and a discussion of the research questions. Figure 2 illustrates the overall research trend among the 44 articles obtained classified by year of publication.

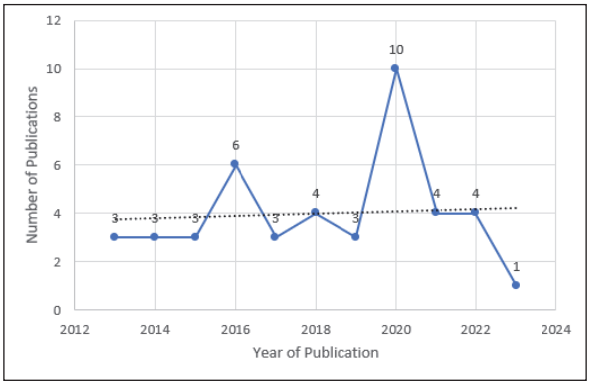

Figure 2. *Trends in publication numbers by year of publication of studies on slow learners in mathematics.*

Figure 2 demonstrates a notable decline in the number of studies on students with learning difficulties in mathematics education in the recent years. For example, Tran et al. (2019) emphasised that students with slower learning rates present a considerable challenge for educational institutions, educators, and parents in Vietnam, particularly within mathematics classes. However, they noted that these students have not been sufficiently addressed in academic research. This finding indicates that research on slow learners in mathematics education remains insufficient.

Furthermore, the VOSviewer software was employed to illustrate the comprehensive research trend (Kirby, 2023). Figure 3 depicts the study cluster map derived from the 44 articles. Distinct colours were used to signify the presence of identical clusters, while the size of each circle is indicative of the popularity of each keyword. The diameter of the circle is indicative of the frequency of discussion of the topic in the 44 articles. The connecting lines between the circles indicate direct relationships between the keywords.

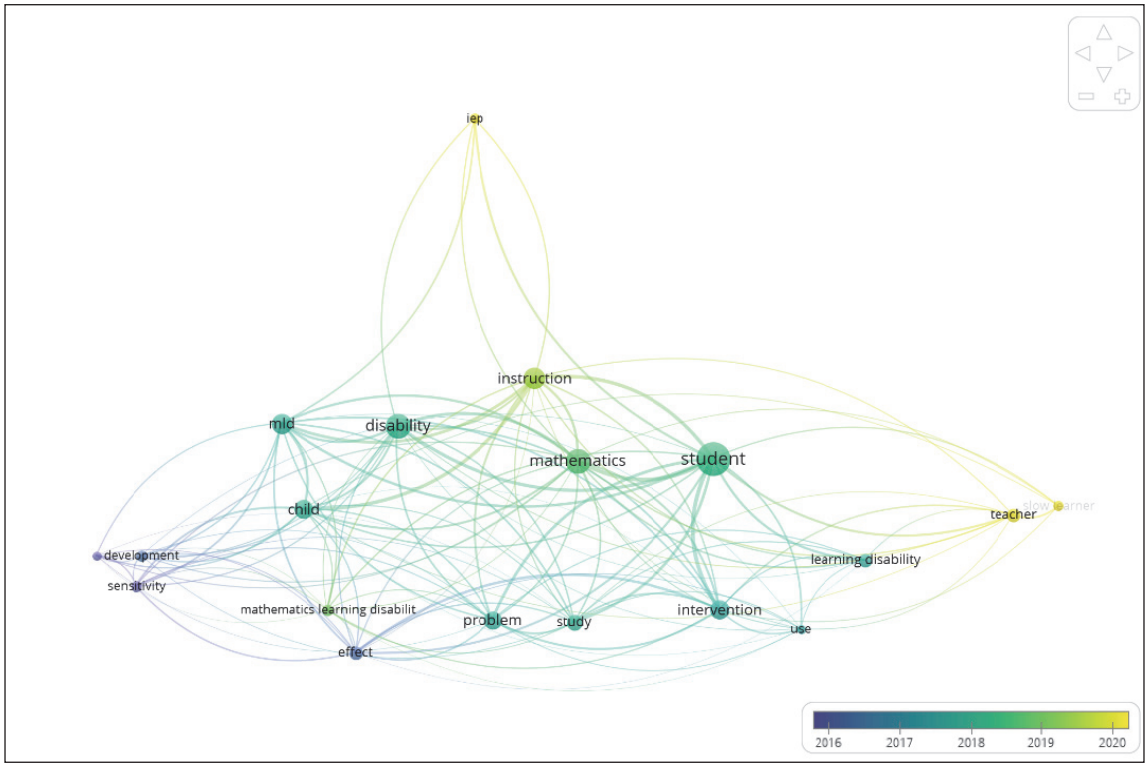

Figure 3. *Cluster map of studies investigating slow learners in mathematics*

The size of each circle, which represents a keyword (see Fig. 3), indicates the frequency of occurrence of that keyword among the 44 processed research articles. A larger circle indicates a higher frequency of use, thereby implying extensive previous research on the variable in question. Figure 4 demonstrates the direct correlation between the keyword "slow learner" and other pertinent keywords.

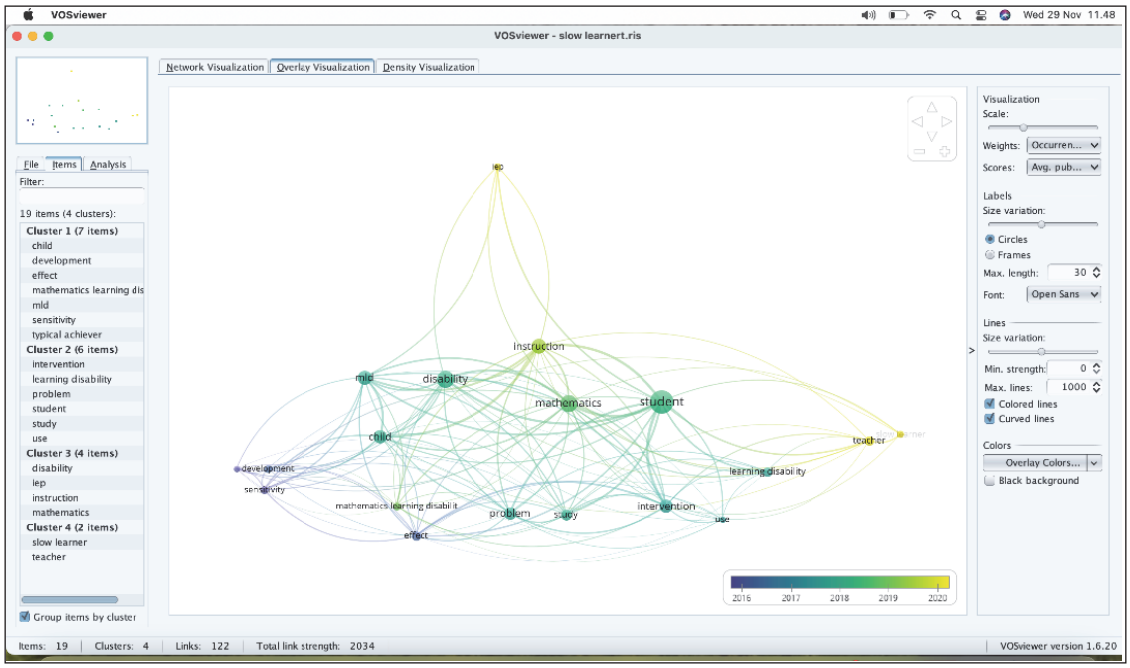

Figure 4. *Relationship between the keyword 'slow learners' and other keywords.*

Figure 4 illustrates four clusters on the map, each identified by a distinct colour. Cluster 1 is characterised by the terms 'child', 'development', 'effect', 'mathematics learning disabilities', 'MLD', 'sensitivity', and 'typical achiever'. Cluster 2 is defined by the terms 'intervention', 'learning disability', 'problem', 'student', 'study', and 'use'. Cluster 3 is defined by the terms 'disability', 'IEP', 'instruction', and 'mathematics'. Cluster 4 is defined by the terms 'slow learner' and 'teacher'. The clusters offer insight into the interconnectivity of these subjects and their roles in the context of mathematics education. This demonstrates that the term "slow learner" is closely associated with the terms in cluster 4, as well as the term "mathematics learning disabilities" in cluster 1. A frame size analysis revealed that the term "slow learner" occurs less frequently than other commonly used terms such as "learning disability" and "typical learner". This is a reasonable assumption, given that some studies have employed alternative terms such as "low achiever" in place of "slow learner".

Study characteristics of selected articles

Table 3 presents a summary of the characteristics of the selected articles, the majority of which were published between 2019 and 2021. The studies primarily focused on primary school students and employed quantitative non-experimental designs, such as correlational research. Moreover, the majority of studies focused on a single mathematical topic. Some participants completed a mathematical assessment and a working memory test, while others performed tasks related to affective aspects.

Table 3. *Characteristics of studies in articles included in systematic review*

Study Characteristics	**n**	**%**	**Study Characteristics**	**n**	**%**
Period			*Research design*		
2013-2015	9	20.5	Qualitative	7	15.9
2016-2018	13	29.5	Quantitative: Experimental	15	34.1
2019-2021	17	38.6	Quantitative: Non-Experimental	17	38.6
2022-2023	5	11.4	Mixed Method	2	4.5
			Design-Based Research	3	6.8
Participant			*Task type*		
Kindergarten	1	2.3	Division	8	18.2
Elementary	18	40.9	Multiplication	5	11.4
Middle school	7	15.9	Geometry	1	2.3
High school	1	2.3	Arithmetic equations	1	2.3
Kindergarten to junior high school	2	4.5	Linear equations problem	1	2.3
Kindergarten to elementary school	1	2.3	Numbers and their operations	13	29.5
Elementary and junior high school	10	22.7	TIMMS problem	1	2.3
College students	2	4.5	Specialised mathematics tests (e.g., ECLS-K Mathematics Test, TEMA 3, the WISC-III-Jordan)	10	22.7
Junior high school teachers and students	2	4.5	Math word problem	2	4.5
			Self-image and motivation to learn	1	2.3
			Mathematics academic scores and working memory scores	1	2.3

Of the 44 articles subjected to analysis, 36 (81.8%, n = 36) were published in journals with a focus on learning disabilities, including the Learning Disability Quarterly, Learning and Individual Differences, and the Journal of Learning Disabilities. A mere eight articles were identified in mathematics education journals. Two articles were published in both ZDM - Mathematics Education and the Journal of Mathematical Behaviour, while one article each was published in Investigations in Mathematics Learning, the International Journal of Mathematical Education in Science and Technology, the Journal on Mathematics Education, and the Mathematics Education Research Journal.

Participant characteristics

Table 3 presents the participant characteristics of the research project investigating the learning characteristics of students with difficulties in mathematics education. The study encompasses a diverse range of educational levels, including kindergarten, primary, secondary, and tertiary students, as well as junior high school teachers and students. This illustrates the comprehensive scope of the research, which aims to elucidate the characteristics of slow learners with respect to their mathematics ability across the various stages of educational development. It is noteworthy that the highest proportion of participants were elementary school students, accounting for 40.9% of the research. Lewis and Fisher (2016) observed that the majority of studies on mathematics learning disabilities have been conducted on elementary school students. Moreover, epidemiological research indicates that approximately 5-10% of school-aged children manifest symptoms of mathematical learning disabilities (Shalev, 2007; Dennis et al., 2015), suggesting that this condition is present at the onset of primary school.

Furthermore, two studies employed the participation of college students (4.5%, n = 2) and junior high school teachers and students (4.5%, n = 2) as subjects. In their 2018 study, Lewis and Lynn employed emancipatory research methods with Dylan, the second author, who was diagnosed with a mathematics learning disability (Lewis & Lynn, 2018). Despite his disability, Dylan had chosen to pursue a degree in statistics at the University of California, Berkeley. Dylan commenced his research by contacting Katie, the

first author, to enquire about the available instructional aids for students with MLD, with the intention of gaining a deeper understanding of these resources from the perspective of an individual with this condition.

Lewis et al. (2020) selected Melissa, a college student, as their case study based on research indicating differences in the approach used by children and adults to perform addition and subtraction of whole numbers. Melissa displayed a distinctive comprehension of the subject matter, which led to her being invited to participate in interviews, formal assessments, and experimental designs regarding algebraic thinking. Meanwhile, Listiawati et al. (2023) employed the Realistic Mathematics Education Approach to enhance the competence of slow learners among junior high school students with the assistance of teacher participants. Similarly, Hunt et al. (2016) developed a supplementary mathematics programme with the objective of promoting evidence-based concepts and the use of appropriate instructional language for educators implementing the curriculum. The programme was designed for students who experienced difficulties with mathematical learning or were diagnosed with disabilities related to it.

Task type characteristics

The articles included in the present systematic review conducted research on a comprehensive array of mathematical tasks, including but not limited to: division, multiplication, geometry, arithmetic equations, linear equation problems, numbers and operations, Trends in International Mathematics and Science Study (TIMMS) problems, and mathematical story problems. This illustrates the breadth of mathematical concepts that were assessed. Nevertheless, the number and operations task type was the most frequently utilised, accounting for 29.5% (n = 13) of the tasks. Akyuz and Stephan (2020) identified that students encounter difficulties in comprehending numbers, particularly those less than zero, as well as in formulating rules for whole numbers. The concept of negative numbers represents a significant challenge for many students, as it requires a shift in understanding from traditional mathematical objects to a more nuanced approach. As evidenced by the study conducted by Hunt et al. (2016), students with mathematics learning difficulties consistently demonstrated lower performance than their peers on tasks involving fundamental counting, ten operations, and multiplicative thinking. Lewis et al. (2020) identified that students encounter difficulties in comprehending and handling negative quantities, particularly with regard to number sense, as well as in interpreting the notation used in whole number operation problems.

Key themes of main articles

Table 4 offers a comprehensive overview of the findings from various studies that have investigated different themes related to supporting slow learners in mathematics education. The three key themes identified in the literature review are: “Strategies for teaching”, “Engagement in learning”, and “Identify slow learners”.

Table 4. *Overview of key themes explored in articles included in the systematic review*

No.	Study	Themes identified		
		Strategies for teaching	**Engagement in learning**	**Identify slow learners**
1.	Satsangi & Hammer (2019)	√		
2.	Armstrong (2022)		√	
3.	Kellems et al. (2020)	√		
4.	Wu et al. (2019)	√		
5.	Stevens & Schulte (2016)			√
6.	Skilling et al. (2020)		√	
7.	Xin et al. (2020)	√		
8.	Liu & Xin (2016)	√		
9.	Dennis et al. (2016)	√		
10.	Rojo et al. (2021)	√		
11.	Hunt et al. (2016)	√		
12.	Zhang et al. (2019)			√
13.	Tran et al. (2019)			√
14.	Rotem & Henik (2015a)	√		
15.	Bishara (2016)	√		
16.	Xin et al. (2016)	√		
17.	Rotem & Henik (2020)		√	
18.	Hacker et al. (2019)	√		
19.	Kohli et al. (2015)	√		
20.	Lewis et al. (2020)		√	
21.	Lewis & Lynn (2018a)		√	
22.	Bishara & Kaplan (2021)		√	
23.	Shin et al. (2017)	√		
24.	Ikhwanudin & Suryadi (2018)		√	
25.	Herold et al. (2019)	√		
26.	Dennis et al. (2015)	√		
27.	Zhang & Rasanen (2018)		√	
28.	Al-Hroub & Whitebread (2019)			√
29.	Yip et al. (2020)			√
30.	Satsangi et al. (2020)	√		
31.	Akyuz & Stephan (2020)	√		
32.	Hott et al. (2020)			√
33.	Bishara (2018)	√		
34.	Lewis & Lynn (2018b)			√
35.	Rotem & Henik (2015b)	√		
36.	Garderen et al. (2014)			√
37.	Zhang et al. (2022)	√		
38.	Listiawati et al. (2023)	√		
39.	Wong et al. (2014)			√
40.	Rotem & Henik (2013)		√	
41.	Cai et al. (2013)			√
42.	Mazzocco et al. (2013)		√	
43.	Gonzalez-Castro et al. (2014)			√
44.	Krutnak et al. (2022)	√		

The emphasis on "Strategies for teaching" in numerous studies (52.3%, n = 23 articles) indicates a focus on exploring various instructional approaches aimed at supporting the learning needs of students with a slower acquisition rate for mathematical skills. These strategies encompass differentiated instruction, personalised learning, and specific teaching methodologies that are tailored to the individual needs of each student. To illustrate, Satsangi and Hammer (2019) evaluated the efficacy of video modelling in explicit geometry instruction for secondary students with learning disabilities. Similarly, Kellems et al. (2020) investigated the efficacy of video-based mathematics instruction for middle school students with specific learning disabilities, while Wu et al. (2019) employed computer software to engage children in numerical and graphical learning, thereby stimulating strategy use and reflective thinking.

The category of "Identify slow learners" indicates that a significant number of studies (27.3%, n = 12 articles) have concentrated on the identification and comprehension of the characteristics and requirements of slow learners in mathematics education. By recognising and addressing the distinctive challenges encountered by these students, educators can implement targeted interventions and support mechanisms to facilitate their academic progress and success. For example, Stevens and Schulte (2016) examined the mathematics achievement growth trajectories of students with learning disabilities and students without disabilities in Grades 3 to 7, utilising multilevel longitudinal models. The researchers explicitly tested the interactions between learning disability status and student demographic characteristics. In a study conducted by Zhang et al. (2019), the visual and auditory perceptions of elementary school children with visual and auditory mathematics learning disabilities were explored from the first to the fourth grade. The study revealed that children with visual mathematics learning disabilities and those with auditory mathematics learning disabilities experienced difficulties in both visual and auditory perception. Furthermore, Tran et al. (2019) identified and provided assistance to students with learning difficulties in mathematics at primary schools in Vietnam. The researchers identified a number of obstacles to the academic success of students with learning difficulties, both within the home and the school environment. This highlights the necessity for individualised support and tailored teaching.

Furthermore, the category of "Engagement in learning" indicates that numerous studies (20.4%, n = 9 articles) have examined the influence of student engagement on mathematical learning outcomes among students with learning difficulties. This theme highlights the significance of cultivating active engagement, motivation, and interest in mathematics to enhance learning outcomes for students who may encounter challenges in the subject. To illustrate, Armstrong (2022) investigated the utilisation of technology by middle school students with mathematics learning disabilities who employed personal electronic devices to facilitate their learning. Skilling et al. (2020) evaluated changes in engagement factors among high- and low-achieving students (grades 6 and 7) over a one-year period as they transitioned from primary to secondary school. Furthermore, Rotem and Henik (2020) conducted a comparative analysis of the performance of two age groups of children with mathematics learning disabilities on a multiplication facts production task, contrasting it with the performance of three age groups of typically achieving children and adults. The objective was to ascertain whether the multiplication development of children with mathematics learning disabilities follows the same trajectory as that observed in typically achieving children. Four aspects of performance were compared: the frequency of retrieval vs. procedural actions, accuracy, response times, and the plausibility of errors (implausible errors were defined as either far, five- or parity-rule violating, non-table, or decade inconsistent errors).

CONCLUSION

The number of studies on slow learners in mathematics education has decreased in the recent years. The most prevalent study design in this area of research is quantitative non-experimental

studies, such as correlational research, which examines various levels of education - from kindergarten to university students - and includes teachers and junior high school students. The majority of studies focus on elementary school students, but research involving university students, teachers, and junior high school students also provides valuable insights into the characteristics of slow learners from a broader perspective.

The diverse range of mathematical exercises encompasses a comprehensive array of concepts, including but not limited to division, multiplication, geometry, arithmetic equations, and others. The recurring exercises frequently involve calculations based on fundamental arithmetic operations, underscoring the importance of grasping the essential mathematical concepts. This study indicates the necessity of a more concentrated approach to mathematics education for students experiencing learning difficulties, particularly at the elementary level. The characteristics of the participants, comprising university students, teachers, and junior high school students, are essential for developing a comprehensive approach to understanding and supporting learners with slower academic abilities at different educational levels. Moreover, the multifaceted array of themes addressed in the context of supporting students with learning difficulties in mathematics education underscores the significance of adopting productive instructional strategies, fostering student engagement, and implementing targeted interventions to meet the needs of these students effectively.

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