

EFFECTIVNESS & USAGE OF MIND MAPPING STRATEGIES ON THE DEVELOPMENT OF PROBLEM-SOLVING AND DECISION-MAKING SKILLS IN STUDENTS WITH SPECIFIC LEARNING DISABILITIES: EDUCATOR'S PERSPECTIVES

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ARTICLE DETAILS	ABSTRACT				
Research Paper	This study investigates how effective mind mapping strategies are and				
Accepted: 28-04-2025	how they might be used to help primary and upper primary Children				
Published: 10-05-2025	with Specific Learning Disabilities (CWSLD) in improving their problem-solving and decision-making skills. Set within the framework of inclusive education, the study focuses on the unique cognitive and				
Keywords:					
Mind Manning Strategies					
CWSLD Problem-solving	learning needs of CWSLD and investigates the potential of mind				
Decision-making	mapping strategies as an alternative teaching approach. A validated				
	self-developed questionnaire was utilized to collect data from 100				
	educators in Delhi NCR using a descriptive quantitative research				
	approach. Statistical analysis, including one-way ANOVA, was used to				
	assess teachers' opinions on two aspects, i.e., teaching experience and				
	subject taught. The findings reveal that mind mapping strategies are				
	consistently and positively perceived by all demographic groups,				
	indicating that they have a high pedagogical potential for supporting				
	cognitive growth in inclusive classrooms.				

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INTRODUCTION:

In today's sporadically changing educational landscape, the capacity to solve issues and make informed judgments is widely regarded as critical for lifelong learning and adaptive functioning. These cognitive talents are especially important for children with Specific Learning Disabilities (SLD), a broad group who have chronic difficulty in reading, writing, arithmetic, reasoning, and language processing. As kids go into upper primary school, where curriculum demands, social interactions, and personal obligations increase, they require effective solutions that not only accommodate their learning problems but also enable them to become autonomous, confident learners.

Mind mapping tactics, which use graphic organizers to graphically illustrate links between concepts, are a potential approach for bridging these gaps. This research investigates the theoretical foundation, implementation techniques, and perceived efficacy of mind mapping tools in strengthening problemsolving and decision-making abilities among children with SLD, drawing on educators' lived experiences and professional views.

In an age when cognitive and socio-emotional abilities are critical, children with SLD encounter particular problems that impede their academic and personal development. Memory, executive functioning, and information processing deficiencies prevent traditional linear note-taking approaches from meeting their demands. Mind mapping methodologies, based on visual learning, provide a viable alternative by allowing for nonlinear representation of information, improving memory retention, and increasing active participation. The purpose of this study is to investigate educators' perceptions on the efficacy of mind mapping tools in promoting problem-solving and decision-making abilities in CWSLD.

Understanding Specific Learning Disabilities (SLDs)

Specific Learning Disabilities are neurological illnesses that influence how people absorb, process, and express knowledge. According to the Individuals with Disabilities Education Act (IDEA), SLD can appear as difficulties in one or more areas, including:

- Oral expression
- Listening comprehension
- Written expression.
- Basic reading skills.
- Reading fluency

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- Reading comprehension
- Mathematics calculation
- Math problem solving

These difficulties are not the result of intellectual limitations, sensory impairments, or socioeconomic disadvantages, but rather of how the brain processes information. Students with SLD sometimes have average or above-average intellect, but perform poorly in certain academic fields. As a result, there is an increasing demand for inclusive, differentiated solutions that are tailored to individuals learning profiles.

Theoretical Foundation of Mind Mapping.

Mind mapping is based on dual coding theory (Paivio, 1971) and cognitive load theory (Sweller, 1988), both of which highlight the need of combining visual and verbal processing to maximize learning. A mind map often begins with a primary subject in the middle of the page, from which related subtopics radiate outward in a hierarchical and linked pattern. The use of terms, pictures, symbols, colors, and spatial links improves memory, understanding, and cognitive organization.

For children with SLD who struggle with linear processing, sequential reasoning, and abstract cognition, mind maps provide an accessible framework for engaging with knowledge more flexibly and creatively.

Mind mapping is based on radiant thinking, which allows pupils to graphically arrange and structure their ideas around a primary idea via the use of branches, keywords, pictures, and colour. This strategy takes use of the brain's innate preference for visual stimuli and has been widely utilized to promote understanding, critical thinking, and creativity.

The Role of Mind Mapping Strategies:

Mind mapping is a visual and nonlinear approach of organizing knowledge that can be very useful for kids with SLD. Mind maps correspond with these learners' cognitive strengths by graphically displaying concepts, ideas, and their linkages, therefore boosting understanding, memory retention, and information organization.

The Advantages of Mind Mapping for Students with SLD:

• <u>Enhanced Comprehension and Memory:</u> Visual representations aid in breaking down complicated material into digestible parts, allowing for greater comprehension and memory.



- <u>Improved Organization</u>: Mind maps assist students to organize knowledge hierarchically, making it simpler to understand the links between concepts.
- <u>Increased Engagement:</u> The use of colors, pictures, and spatial patterns in mind maps can make learning more entertaining for kids who might find traditional techniques tough.
- <u>Support Diversity</u>: It supports a variety of learning styles, including visual and kinesthetic learners, and provides an alternative to text-heavy instructional materials.

Mind Mapping to Improve Problem Solving Skills:

Problem-solving entails detecting difficulties, assessing them, developing potential solutions, and carrying out successful activities. Students with SLD frequently experience difficulty in:

- Understanding Problem Statements
- Identifying Key Details
- Organizing steps logically
- Monitoring progress and adjusting solutions.

Mind maps can aid in the following areas:

- <u>Clarifying the Problem</u>: By graphically mapping out the components of a problem, students may break down complicated difficulties into manageable portions.
- <u>Generating Options</u>: Branches from the core problem might indicate potential solutions, results, and repercussions, facilitating diverse thinking.
- <u>Planning and Sequencing</u>: Mind maps help students construct step-by-step action plans and visualize event sequences.
- <u>Evaluating Results</u>: Using visual analysis, students may compare the effectiveness of various strategies.

Mind Mapping to Improve Decision-Making Skills:

Decision-making entails weighing alternatives, anticipating outcomes, and selecting suitable solutions.Students with SLD may struggle with attention control, working memory, and comparing options, all ofwhicharenecessaryforeffectivedecision-making.Mind mapping helps this process by:



- Organizing Information: Enables students to categorize facts, views, pros, and cons.
- <u>Reducing Cognitive Overload</u>: Visual-spatial arrangements reduce the mental stress of interpreting linear text or spoken instructions.
- <u>Supporting Metacognition</u>: Encourages pupils to reflect on their values, aspirations, and potential consequences, resulting in increased self-awareness and decision-making control.

Educators' Perspectives on Implementation

The viewpoints of educators are critical to understanding how mind mapping tools work in real classrooms. Teachers claim various advantages of integrating mind maps:

- <u>Differentiated Instruction</u>: Mind maps may be tailored to individual student needs, making them a perfect UDL (Universal Design for Learning) tool.
- <u>Active Learning</u>: Allowing students to create their own mind maps promotes ownership, engagement, and deeper processing of knowledge.
- <u>Assessment and Feedback</u>: Mind maps can help teachers assess understanding, track progress, and detect misconceptions in student thinking.

Teachers also emphasize practical strategies:

- <u>Pre-instructional Use</u>: Introducing concepts using a teacher-led mind map to activate past knowledge.
- <u>Mid-lesson Use</u>: Collaborative mapping to investigate cause-effect relationships or generate ideas.
- <u>Post-instructional Use:</u> Student-created mind maps as a tool for evaluation and reflection.

Challenges and Considerations for Implementation:

Despite its potential, mind mapping methodologies are not without obstacles.

- <u>Training and Support</u>: Many instructors believe they require specific professional development in the construction and pedagogy of mind maps.
- <u>Time Constraints:</u> Both students and instructors may find that creating and analyzing mind maps takes some time at first.
- <u>Technological Barriers</u>: While digital mind mapping applications (such as MindMeister and Coggle) provide additional functionalities, access to devices and infrastructure may be limited in some schools.



• <u>Student Variability:</u> Some children with SLD may need extra scaffolds to utilize mind maps effectively, such as sentence starters, templates, or guided practice.

Implications of Inclusive Education:

The use of mind mapping corresponds with the larger aims of inclusive education. As a low-barrier, high-impact technique, it demonstrates how visual aids may overcome academic gaps while encouraging autonomy, agency, and executive functioning in students with SLD. Mind mapping allows students to externalize their mental processes, think critically, and engage more deeply with knowledge. For these reasons, educational officials, curriculum creators, and teacher training institutes should seriously explore incorporating mind mapping into inclusive pedagogical frameworks.

SIGNIFICANCE OF STUDY:

The purpose of this study is to investigate educators' impressions of the effect of mind mapping tools on the development of problem-solving and decision-making skills in primary and upper primary children with Specific Learning Disabilities (SLD). It focuses on how these tactics may improve critical thinking, creativity, and self-regulation—all of which are essential for optimal cognitive functioning. By addressing the particular learning obstacles of students with SLD, this study aims to assess the potential of mind mapping as an alternative to standard teaching approaches that frequently fail to fulfill their different requirements. The project also intends to fill current research gaps by providing evidence-based insights that may be used to improve inclusive teaching methods. Ultimately, the findings will help to create more empowering, cognitively responsive, and learner-centered settings for children with SLD.

STATEMENT OF THE PROBLEM

To investigate educator's perspective towards the effectiveness and usage of mind mapping strategies in enhancing the problem-solving and decision-making skills among students with SLD.

OBJECTIVES:

There are two objectives that this paper will address. They are :-

• To study the perceptions of educators towards the effectiveness & usage of mind mapping strategies on the development of problem-solving skills among students with SLD.



• To study the perceptions of educators towards the effectiveness & usage of mind mapping strategies on the development of decision-making skills among students with SLD.

HYPOTHESIS:

H0: There is no significant difference among the perspectives of educators towards the effectiveness & usage of mind mapping strategies in enhancing problem-solving skills among students with SLD on the basis of teaching experience and subject.

H0: There is no significant difference among the perspectives of educators on effectiveness & usage of mind mapping strategies in enhancing decision-making skills among students with SLD on the basis of teaching experience and subject.

Hence, null hypothesis will be there.

METHODOLOGY:

This study used a descriptive research design with a survey method to investigate educators' perceptions of the effectiveness and application of mind mapping strategies in developing problem-solving and decision-making skills among students with Specific Learning Disabilities (SLD) at the primary and upper-primary levels. The data were analyzed using one-way ANOVA (single factor).

The study included a total of 100 instructors picked at random. The sample includes both general and special instructors from inclusive government and private schools in Delhi NCR. Inclusion criteria were educators of both genders who taught a variety of STEM subjects (mathematics, science, social science, and language) and had varying degrees of expertise. Educators from outside of the Delhi-NCR region, as well as those teaching non-core topics or in non-institutional settings, were excluded.

A self-developed questionnaire (rating scale) was employed as the study tool. Part A collected demographic information, whereas Part B examined educators' understanding and views of mind mapping strategies, which were divided into two domains: problem-solving abilities (10 questions) and decision-making skills (10 items). 13 RCI-certified specialists from Amity Institute of Rehabilitation Sciences at Amity University validated and verified the questionnaire for dependability.



Each item was scored on a 5-point Likert scale (Strongly Agree = 5, Strongly Disagree = 1), with negatively phrased items receiving reverse scoring.

Informed consent, confidentiality, and the limited use of data for research purposes were among the ethical issues. The final tool was digitized and distributed using Google Forms, and the data was collected online, followed by the analysis and final discussion.

REVIEW OF LITERATURE:

Nur et al. (2024) This study is a quantitative meta-analysis to assess the impact of an inquiry-based learning method combined with mind mapping tools on students' problem-solving skills. The study discovered a substantial beneficial influence after collecting data from international journals and conferences published between 2015 and 2023 and using stringent inclusion criteria (e.g., experimental/quasi-experimental design, large sample size of 1021). Integrating mind mapping with inquiry-based learning significantly improves students' problem-solving skills, according to JASP analysis (rRE = 1.31; z = 7.019; p < 0.001).

Ulfah et al. (2024) In the study investigated the effects of mind mapping methods on fourth-grade students' creative thinking abilities in mathematics. The study employed a quantitative approach with a quasi-experimental design that included two groups: the experimental group and the control group. The data was obtained using the t-test, and the results revealed that mind mapping tactics greatly increased students' creative thinking skills when compared to traditional lecture approaches, question-and-answer sessions, and assignments. The study indicated that using mind mapping tools as an instructional style improves students' creative thinking abilities in mathematics.

Faradiba and Bahri's (2024) This study looks at how the mind mapping techniques learning paradigm affects students' cognitive learning in sound science courses. The findings indicate a considerable difference between the mind mapping strategy learning methodology and direct learning techniques. The hypothesis test findings indicate that the mind mapping methods model has a considerable impact on students' cognitive outcomes for sound material, with an effect size of $E_s=1.00 > 0.8$. The survey findings demonstrate that the mind mapping techniques learning approach improves students' cognitive learning it simpler for them to understand the material. The study was carried out at SD Negeri 12 Singkawang utilizing a true experimental design with a posttest-only control.



Haris, A., Jasruddin, Bundu, P., & Ali, S. (2024). This study looks into the influence of dynamic problem-solving learning approaches on students' critical thinking skills. The study included first-year undergraduate students from the Physics department at Universitas Negeri Makassar. The study took a quantitative approach, with a posttest-only control group. The findings revealed that dynamic problem-solving learning approaches were well-executed and widely accepted. The experimental group had a higher average critical thinking score of 80.10 than the control group, which had 59.81. The study discovered a considerable impact of dynamic problem-solving learning approaches on students' critical thinking skills.

Güneri, A., & Korkmaz, Ö. (2023). In a study done in Adıyaman, Turkey, the researchers employed a quasi-experimental strategy with 17 students completing a pretest-post test with no control group. Kapsul, ABC Baglama, Sudoku, Three Stones, Kendoku, and Kakuro were among the games employed in the research. The findings indicated that Mind Games activities had a positive impact on pupils' computational ability. The study revealed that Mind Games activities help pupils enhance their problem-solving and computational thinking skills.

Badriah, L., Mahanal, S., Lukiatim, B., & Saptasari, M. (2023). This study looks at the effects of Collaborative Mind Mapping Strategies (CMM)-Assisted RICOSRE on students' problem-solving abilities in the Biology Education Study Program at Siliwangi University in Tasikmalaya, Indonesia. The study included 100 students: 40 in the experimental group using the RICOSRE-CMM model, 35 in the positive control group utilizing RICOSRE, and 25 in the negative control group who got direct instruction. The findings revealed that the RICOSRE-CMM learning model considerably enhanced students' problem-solving abilities at Tasikmalaya.

Shi, Yinghui & Yang, Huiyun & Dou, Yi & Zeng, Yong. (2022). A meta-analysis of 21 research revealed that mind mapping strategy-based training has a greater favorable impact on cognitive learning outcomes than traditional instruction. Lower-grade pupils were more vulnerable to its effects than upper-grade students. Mind mapping strategies-based training increases cognitive learning results across all courses, particularly in Science, Technology, Engineering, and Mathematics. Both findings emphasize the relevance of problem-solving skills in current educational settings.

Tendrita, M., Azzajjad, M. F., & Ahmar, D. (2022). The study examined the efficacy of mind mapping tactics mixed with problem-solving procedures in online Schoology-based learning. The study

included students from the Department of Biology Education at Universitas Sembilanbelas November Kolaka during the 2020/2021 academic year. The experimental class performed the best in problem-solving abilities, suggesting that mind mapping tactics paired with problem-posing can improve students' problem-solving skills.

Bhattacharya, D., and Ramakanta Mohalik (2021) studied the impact of mind mapping methodologies on upper primary children' thinking progress in geography. The study employed a pretest, post-test non-equivalent group design, with 74 students separated into experimental and control groups. The self-prepared performance exam from the West Bengal State Board's class VIII textbook was utilized as an instrument. The students taught geography using mind mapping methodologies outperformed those taught using traditional methods. Mind mapping procedures enhance gender equality in geography learning performance and cognitive growth, making them appropriate for improving students' understanding of content. The students improve their cognitive development.

Ramazan Yurtseven et al. (2021). The study investigated the efficacy of a problem-based learning paradigm that used mind maps to improve critical thinking and problem-solving abilities among students in class X at SMA Negeri 2 Bandar. The study employed a quasi-experimental technique with two group pretest-post test designs and a sample size of 64 students. The findings revealed that traditional learning lacked critical thinking and problem-solving abilities, but the mind-based method considerably increased these abilities.

Sari et al. (2021). The study investigated the impact of the mind mapping techniques learning paradigm on students' cognitive learning outcomes in sound science courses. The hypothesis test findings revealed that the mind mapping techniques learning model had a substantial influence on students' cognitive learning outcomes for sound material, with an effect size of $E_s=1.00 > 0.80$. The study was carried out at SD Negeri 12 Singkawang utilizing a true experimental design with a post-test alone control. The data indicate that the mind mapping techniques learning paradigm may greatly improve students' cognitive learning outcomes and help them understand the material.

Jabraily, Mohamad & Motazakker, Morteza & Foozonkhah, Shahla & Yavar, Shohreh. (2018). The study analyzes how mind-mapping software affects pupils' problem-solving ability. It involved 24 health information technology students from Urmia University of Medical Sciences, separated into case control and user groups. The case group was taught how to utilize Freeplane software, whilst the user group proposed solutions to difficulties in hospitals' health information management departments. The findings revealed a substantial difference in mean scores between the two groups. Students that used Freeplane software reported enhanced problem-solving and creativity while staying focused on their studies. According to the study, mind-mapping software can help pupils enhance their decision-making and problem-solving skills.

Novita, Bukit, and Sirait (2018). The study examined the effectiveness of using mind maps in a problem-based learning approach to enhance critical thinking and problem-solving skills among students in class X at SMA Negeri 2 Bandar. The research used a quasi-experimental approach with 64 pupils, with the experimental class being Class X MIPA-1 and the control class being Class X MIPA-3. The results showed that the mind-based approach significantly improved these skills, indicating its potential for effective problem-solving.

Balım's (2013). The study examined how mind-mapping strategies affect students' perceptions of inquiry-learning skills, academic achievement, and information retention. The study included 64 seventh-grade students from Izmir, Turkey, and discovered that the experimental group outperformed the control group in terms of academic achievement, learning retention scores, and attitudes about inquiry-learning skill ratings.

Wen-Cheng, Chieh, and Ying-Chien's (2010). The study emphasized the advantages of mind mapping methodologies, which employ lines, colors, characters, numbers, symbols, pictures, photos, or keywords to correlate, integrate, and visualize taught concepts. These tactics help to increase attention, coordination, logic, reasoning, thinking, creativity, imagination, memory, and other skills. Drawing capabilities are greater to writing abilities in young children, making mind mapping tools useful for learning and expression.

Ardiansyah and Akbar (2024). The study evaluate the efficacy of the Reading, Mind Mapping Strategies, and Sharing (RMS) learning paradigm in improving students' problem-solving skills and cognitive engagement. Using a quasi-experimental research design and statistical processes, the study discovered that the RMS learning model considerably improves problem-solving abilities, making it an important approach for Islamic Religious Education educators to increase student cognitive engagement and academic performance.



Cahyanti, A. D., Sudibyo, E., & Rahayu, Y. S. (2021). The study aims to build an insect encyclopedia e-book utilizing mind mapping methodologies to promote student creativity in class X Senior High School. The ebook combines technological breakthroughs with 21st-century abilities such as communication and creativity. The modified research and development technique was employed, and the average score for student learning outcomes was 82.60%, with a N gain value of 0.50 in the medium range.

Zhao, L., Liu, X., Wang, C., & Su, Y.-S. (2022). The researchers employed two approaches: constructby-self mind mapping techniques (CBS-MM) and construct-on-scaffold mind mapping strategies (COS-MM). The results demonstrated that both techniques can improve CT skills, however COS-MM is more advantageous to COS group students. The findings can assist instructors create classes and teach programming using various mind mapping strategy tools.

Safro, R. M., & Nuroh, E. Z. (2023). The study examined the effectiveness of the Canva-assisted mind mapping strategies learning model in teaching poetry to fifth-grade students at Muhammadiyah 5 Porong Elementary School. The research used a pre-experimental design and one-group pretest-post-test design model, involving 22 students from Class V. The results showed that the mind-mapping learning approach significantly improved students' poetry-writing skills, achieving 90% of the N-gain value.

Le, L.-A. T., Le, N. P., Ngo, L.-A. T., & Tran, Q.-N. T. (2023). The study investigated the application of mind mapping procedures, a prominent learning tool, in descriptive writing with primary students. The study included 94 fifth-grade children who were taught both the recommended methodology and the traditional way. The findings revealed that students who learnt using the mind map method did better in writing. The study reveals that teachers might utilize mind mapping tools to help their pupils improve their writing abilities and prepare them for learning.

Soliman, M. M. (2021). The The study evaluated the efficacy of mind mapping tools in increasing writing abilities in sixth-grade primary school students in Qatar. A quasi-experimental technique was adopted, with 51 youngsters from Al Forqan Boys' Elementary School serving as the purposive sample. The results revealed substantial variations between pre-test and post-test writing ability assessments. The study advocates focusing on writing abilities other than mechanics and procedure and implies that exposure to this training method can improve post-test writing capabilities.



Zuhriyah, L., & Widodo, W. (2020). The study explores the use of mind mapping strategies in guided discovery learning for improving science process abilities in class VIII-B at MTsN Gresik. Results show that 27 students achieved high scores, while 3 received medium scores. The study highlights the effectiveness of mind mapping strategies in enhancing scientific process abilities.

Meiarti, D., Ellianawati, & Rozak, A. (2019). The conducted study focuses to improve vocational school students' creative thinking skills in physics learning by employing mind mapping tools and problem-solving techniques. The research included 30 students from class X at SMK Pelayaran Wira Samudera Semarang, who used discussion papers, essay exams, and learning technologies like as PowerPoint and Macromedia Flash. The findings revealed an average creative thinking competence of 58.33%.

Ismail, M. N., Ngah, N. A., & Umar, I. (2010). The study looks at the effects of mind mapping methodologies, cooperative learning (MMCL), and cooperative learning (CL) on Malaysian computer science students' programming skills, problem-solving abilities, and metacognitive knowledge. The results reveal that MMCL outperforms CL and T methods across all logical thinking levels. There was no significant interaction effect detected between teaching techniques.

Abdallah, M. M. S., Elmohsen, S. A., & Ahmad, A. (2022). The study investigated the efficacy of mind mapping tools for enhancing creative writing abilities among 30 third-year prep school students at Um Al-Momineen Preparatory School. The study employed a one-group quasi-experimental design, prepost testing, and interviews with instructors and students to find substantial changes in mean scores.

GAP ANALYSIS:

- Fills a study gap in mind mapping strategies for problem-solving and decision-making capabilities.
- Gaps exist, particularly among children with SLD.
- Current research is primarily focused on general student populations or specialized sectors, excluding CWSLD.
- Current research frequently misses instructors' viewpoints on the efficacy of mind mapping techniques.



- The importance of mind mapping tactics in boosting decision-making abilities has not been fully investigated.
- There is ambiguity over the long-term impact and durability of mind mapping strategy • approaches.
- More research is needed to determine possible advantages for SLD students. ٠

DATA ANALYSIS:

Researcher created a single self-designed questionnaire with a five-point rating scale for the study to assess the study's specific objectives. This questionnaire was then validated by 13 experts who are specialists in rehabilitation.

Table no :1. One-Way ANOVA comparing perspectives of teacher educators for problem solving skills on the basis of teaching experience

							Remarks
Source of							
Variation	SS	df	MS	F	P-value	F crit	
Between							
Groups	17.0835	3	5.694499				NS (at 0.05
Within							
Groups	5653.406	92	61.45007	0.092669	0.963912	2.703594	level)
Total	5670.49	95					

The table above interprets the ANOVA findings of perspectives of teacher educators for problem-solving skills on the basis of teaching experience. The F and P scores of educators are observed as F = 0.92669 and P = 0.963912 from the F and P scores it can be interpreted that there is a clear no difference between the F and P scores of teaching experience.

However, the statistical findings show that the F(0.09) and P(0.9) which is found to not significant at 0.05 level.



Hence, there is no significant difference among the perspectives of educators towards the effectiveness & usage of mind mapping strategies in enhancing problem-solving skills among students with SLD.

Table no : 2. One-Way ANOVA comparing perspectives of teacher educators for decision making skills on the basis of teaching experience

Source of							Remarks
Variation	SS	df	MS	F	P-value	F crit	
Between Groups	134.4884	3	44.82945				NS ((at
Within Groups	4300.501	92	46.74458	0.95903	0.415609	2.703594	0.05
Total	4434.99	95					level)

The table above interprets the ANOVA findings of perspectives of teacher educators for decision-making skills on the basis of teaching experience. The F and P scores of educators are observed as F = 0.95903 and P = 0.415609 from the F and P scores it can be interpreted that there is a clear no difference between the F and P scores of teaching experience.

However, the statistical findings show that the F(0.09) and P(0.4) which is found to not significant at 0.05 level.

Hence, there is no significant difference among the perspectives of educators towards the effectiveness & usage of mind mapping strategies in enhancing decision-making skills among students with SLD.

Table no : 3. One-Way ANOVA comparing perspectives of teacher educators for problem solving skillson the basis of subject

Source of							Remarks
Variation	SS	df	MS	F	P-value	F crit	
Between Groups	274.697354	3	91.56578483				NS (at
Within Groups	5611.09265	96	58.44888172	1.500500	0.202500	2 (00202)	0.05
				1.366396	0.202509	2.6993926	level)
Total	5885.79	99					



The table above interprets the ANOVA findings of perspectives of teacher educators for problem-solving skills on the basis of their subject. The F and P scores of educators are observed as F = 1.566596 and P = 0.202509 from the F and P scores it can be interpreted that there is a clear no difference between the F and P scores of teaching experience.

However, the statistical findings show that the F(1.5) and P(0.2) which is found to not significant at 0.05 level.

Hence, there is no significant difference among the perspectives of educators towards the effectiveness & usage of mind mapping strategies in enhancing problem-solving skills among students with SLD.

Table no : 4. One-Way ANOVA comparing perspectives of teacher educators for decision making skillson the basis of subject

Source of							
Variation	SS	df	MS	F	P-value	F crit	Remarks
Between Groups	133.858307	3	44.61943563				
Within Groups	4472.33169	96	46.58678847				NS (at
······································				0.95777	0.416016	2.6993926	0.05
Total	4606.19	99					level)

The table above interprets the ANOVA findings of perspectives of teacher educators for problem-solving skills on the basis of their subject. The F and P scores of educators are observed as F = 0.95777 and P = 0.416016 from the F and P scores it can be interpreted that there is a clear no difference between the F and P scores of teaching experience.

However, the statistical findings show that the F(0.9) and P(0.4) which is found to not significant at 0.05 level.

Hence, there is no significant difference among the perspectives of educators towards the effectiveness & usage of mind mapping strategies in enhancing decision-making skills among students with SLD.



MAJOR FINDINGS:

• Consistent Views Throughout Teaching Experiences

According to the study, teachers' evaluations of the value of mind mapping techniques in helping students with SLD develop their problem-solving skills were not significantly impacted by their prior teaching experience. All groups, regardless of experience level, concurred that mind mapping techniques are a successful teaching tool. This study backs up the notion that belief in the effectiveness of such strategies is based on a shared understanding of students' cognitive needs and the inclusive potential of visual learning materials rather than just years of experience.

• Experience Level Has No Effect on Decision-Making Ability

The views of educators at different levels of teaching experience regarding the use of mind mapping strategies to enhance decision-making skills in students with SLD also did not differ statistically significantly. This demonstrates that teachers of all levels typically acknowledge the cognitive scaffolding that mind mapping techniques offer in helping students arrange data, evaluate options, and reach well-informed conclusions. It symbolizes a pedagogical consensus among generations of educators regarding what makes for effective, student-centered support for students with different needs.

• Subject Specialization Does Not Matter.

One crucial finding from the study is that an educator's subject area—whether math, science, language, or social studies—has no substantial impact on how they assess the effectiveness of mind mapping techniques. Teachers from many disciplines expressed comparable enthusiasm, describing mind mapping as a versatile and adaptive tool that works well in any classroom. This emphasizes its power as a teaching style that accommodates a diverse variety of pupils, particularly those with Specific Learning Disabilities (SLD).

• Common Confidence in Mind Mapping



What sticks out most is the teachers' unwavering conviction in the effectiveness of mind mapping, regardless of their experience or topic knowledge. Educators agree that it is an effective strategy to improve student comprehension, stimulate involvement, and enhance cognitive processes in students with SLD. This common viewpoint supports the case for making mind mapping a regular component of inclusive teaching techniques.

DISCUSSION:

The research paper examines educators' impressions of mind mapping tools for developing problemsolving and decision-making abilities in kids with SLD. It investigates whether these perceptions differ based on professional characteristics such as teaching experience and topic specialty, with One-Way ANOVA as the primary statistical comparison approach.

Educator Perceptions and Teaching Experience

The results of the analysis were fascinating. Tables 2 and 3 show that the calculated F-values for decision-making skills (F = 0.415609) and problem-solving skills (F = 0.092669) were paired with Pvalues of 0.963912 and 0.963912, respectively, both of which were above the significance level ($\alpha =$ (0.05). These results show that teachers' evaluations of the effectiveness of mind mapping techniques in helping children with SLD develop these crucial skills were not statistically impacted by their years of professional of teaching experience length service. or The discovery is very significant. It is reasonable to assume that more seasoned teachers with years of classroom experience will support or oppose such strategies in different ways than their less seasoned peers. The data, however, tells a different tale-one of consistency in belief, with the perceived advantages of mind mapping techniques extending beyond differences in experience or age. The idea that visual-spatial approaches could act as cognitive anchors for students who struggle with abstract thought and decision-making is widely held across the educational spectrum.

Subject Specialization and Perceptual Uniformity

When it comes to mind mapping tools, educators from various subject areas—from organized subjects like math and physics to more interpretative ones like languages and social studies—have similar perspectives. The statistics demonstrate no significant variations in how these instructors view the value of mind mapping in assisting children with Specific Learning Disabilities (SLD), notably in problem



solving

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and

decision-making.

This shows that mind mapping is not limited to a single subject. Instead, it is valued as a versatile, crossdisciplinary tool that promotes clear thinking, organizing, and self-directed learning. The widespread agreement across disciplines suggests that visual learning strategies, such as mind mapping, can be successful for all types of learners, particularly those with SLD—regardless of the subject being taught.

IMPLICATIONS:

The outcomes of this study provide essential suggestions for promoting inclusive education, particularly for children with Specific Learning Disabilities (SLD). Here's their suggestion:

1. A Solid Foundation for Universal Teaching Practices.

The fact that educators of all areas and levels of experience have a positive attitude toward mind mapping tools demonstrates that there is already a solid foundation for incorporating this tool into daily instruction. Because there is no opposition to the strategy, it may be more simply implemented in schools, particularly those serving diverse learners. Because of this shared support, mind mapping is an effective option for inclusive education.

2. Efficient Teacher Training and Development

Because views of mind mapping are rather consistent across subjects and experiences, teacher training programs may take a unified approach. There is no need to construct separate courses for various sorts of teachers. Training may concentrate on the fundamental advantages and classroom uses of mind mapping tools, saving time and money while supporting consistent teaching practices.

3. Consistent Support for Students with SLD.

Students with SLD benefit from consistency, and this study suggests employing mind mapping as a consistent educational strategy across topics and teachers. When all instructors take the same approach, children receive more consistent and effective guidance, allowing them to develop abilities in problem solving, decision-making, and critical thinking.



4. Increasing Equity And Accessibility

Mind mapping methodologies are also consistent with the ideas of Universal Design for Learning. These technologies, which are successful for a wide range of learners and teaching styles, can contribute to making education more accessible and equal. They advocate for both tailored education and inclusive methods, ensuring that all students, not just those with SLD, benefit from more deliberate and engaging learning experiences.

RECOMMENDATIONS:

• Conduct Qualitative Exploration using focus groups, interviews, and classroom observations, investigate the "why" and "how" of educators' admiration for mind mapping tactics.

• Use Learner-Centric Information to assess the success of mind mapping strategies, use student performance data from learning portfolios, reflective diaries, and pre- and post-intervention exams.

• Create Mind Mapping Strategies modules and customize the tactics for individual courses to enhance subject-specific learning while maintaining universal accessibility.

• Integrate mind mapping tools into inclusive pedagogy and teacher education modules for tailored teaching, inclusive education, and cognitive scaffolding.

• Encourage Interdisciplinary Cooperation in Instructional Design: Encourage instructors from all disciplines to collaborate on lesson preparation to create more durable, adaptive, and portable visual aids.

• Use Visual Thinking Tools in Policy Frameworks and Curriculum Guidelines: Recognize the importance of visual thinking tools such as mind maps in promoting learning autonomy, executive functioning, and metacognitive development, particularly among students with learning difficulties.

CONCLUSION:

According to the study, educators, regardless of teaching experience and subject taught, believe that mind mapping strategies help children with Specific Learning Disabilities (SLD) build problem-solving and decision-making skills. The identification of visual thinking tools as critical for cognitive

accessibility and engagement is gaining traction among educators. Mind mapping tactics simplify difficult knowledge, improve memory retention, and promote independent thought, making them an invaluable tool for inclusive educators. The study advocates for more research on practice, implementation integrity, and student effect, as well as an understanding of how these principles are implemented in the classroom. The study reveals that by adopting mind mapping strategies as a student-centred, egalitarian, and adaptable teaching method, the educational community may ensure that kids with SLD achieve academically, artistically, and autonomously.

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