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The Sengkedan Technique as a Strategy for Strengthening Numeracy Literacy in Learning LCM and GCD in Elementary Schools

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ABSTRACT

Numeracy literacy is an essential competency for elementary school students, particularly in understanding mathematical concepts related to numbers, factors, multiples, and arithmetic operations. One topic that often creates difficulties for students is the Least Common Multiple (LCM) and Greatest Common Divisor (GCD). These difficulties are commonly caused by students' limited understanding of factors and multiples, inadequate mastery of multiplication and division, and teaching methods that remain oriented toward procedural memorization. This artide aims to describe the sengkedan technique, also known as the ladder technique, as an alternative instructional strategy to strengthen students' numeracy literacy in learning LCM and GCD in elementary schools. This study employed a qualitative approach with a conceptual review based on literature study. The data were obtained from elementary mathematics learning books, journal artides, and policy documents relevant to numeracy literacy, the Merdeka Curriculum, and mathematics instruction. The data were analyzed using narrative synthesis by grouping the literature into themes of numeracy literacy, characteristics of the sengkedan technique, dassroom implementation, and its relevance to numeracy indicators. The findings indicate that the sengkedan technique has the potential to help students understand the relationship between factors and multiples more systematically, simplify the process of finding LCM and GCD, and support mathematics learning that is more visual, structured, and active. This technique is also relevant to strengthening numeracy literacy because it involves number understanding, arithmetic operations, pattern recognition, problem solving, and mathematical communication. Therefore, the sengkedan technique can be used as an alternative strategy in elementary mathematics learning, particularly when implemented through gradual practice, visual media, group discussion, contextual problems, and formative assessment.

Keywords: numeracy literacy, sengkedan technique, LCM, GCD, elementary mathematics learning

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INTRODUCTION

Elementary education plays a fundamental role in developing students' basic competencies, particularly literacy and numeracy. Numeracy literacy is not limited to the ability to perform calculations, but also includes the ability to understand numerical information, reason mathematically, interpret quantitative situations, and apply mathematical concepts in everyday life. In elementary schools, numeracy literacy becomes an important foundation for students to understand more complex mathematical concepts at the next level of education (Kemendikbud, 2022; OECD, 2023; Wijaya, 2022).

In the context of the Merdeka Curriculum, strengthening numeracy literacy is one of the priorities in learning. Mathematics learning is expected not only to train students to memorize formulas or procedures, but also to guide them in understanding concepts, using reasoning, communicating ideas, and solving contextual problems. The learning outcomes of mathematics in the

Merdeka Curriculum emphasize number sense, operations, patterns, reasoning, and problem solving as essential elements of mathematics learning at the elementary level (Badan Standar, Kurikulum, dan Asesmen Pendidikan, 2024; Kemendikbudristek, 2023). Therefore, teachers need instructional strategies that are simple, meaningful, and suitable for the developmental characteristics of elementary school students.

One of the mathematical topics that often causes difficulties for elementary school students is the Least Common Multiple (LCM) and Greatest Common Divisor (GCD), known in Indonesian as Kelipatan Persekutuan Terkecil (KPK) and Faktor Persekutuan Terbesar (FPB). This material requires students to understand the concepts of factors, multiples, prime numbers, multiplication, and division. In practice, many students still confuse factors and multiples, have difficulty identifying prime numbers, and tend to memorize steps without understanding the underlying concepts (Heruman, 2020; Rahmah, 2021; Van de Walle et al., 2019).

The difficulty in learning LCM and GCD is often reinforced by conventional teaching methods. Teachers frequently ask students to list all factors or multiples manually, which may take considerable time and cause students to lose motivation. For some students, long procedures make mathematics appear complicated and difficult. As a result, the learning process tends to emphasize procedural completion rather than conceptual understanding and numeracy reasoning (Gersten et al., 2009; NCTM, 2014; Susanto, 2020).

Mathematics learning in elementary schools should be designed through concrete, visual, and systematic activities because students at this stage still need clear representations to understand abstract concepts. Visual and structured strategies can help students connect mathematical symbols with meaningful procedures and concepts (Clements & Sarama, 2020; Reys et al., 2019). In this regard, instructional techniques that simplify procedures while maintaining conceptual clarity are important to support students' numeracy development.

To address this issue, teachers need instructional strategies that are practical, visual, structured, and easy for students to follow. One alternative strategy is the sengkedan technique. The sengkedan technique is a ladder-like division method using prime numbers to determine LCM and GCD. This technique allows students to find LCM and GCD in one systematic process. Through this technique, students can observe the relationship between numbers, factors, prime divisors, and the results of repeated division.

The sengkedan technique is pedagogically relevant because it connects several numeracy skills in one learning activity. Students are required to identify numbers, divide using prime factors, multiply prime divisors, distinguish common factors, and interpret the final results. These activities are aligned with numeracy literacy because they involve number understanding, arithmetic operations, pattern recognition, problem solving, and mathematical communication (Nunes et al., 2016; Purpura & Lonigan, 2015; Wahyudi & Anugraheni, 2021).

Previous studies and policy documents have emphasized the importance of strengthening numeracy through meaningful mathematics learning, contextual problems, and active student involvement (Kemendikbud, 2022; Mullis et al., 2020; OECD, 2023). However, specific discussions on the sengkedan technique as a strategy for strengthening numeracy literacy in LCM and GCD learning remain limited. Most discussions about numeracy focus on broad literacy-numeracy programs, while classroom-level strategies for teaching KPK and FPB still require further conceptual elaboration.

Therefore, this article seeks to present a conceptual analysis of the sengkedan technique and its relevance to numeracy literacy in elementary mathematics learning. This article aims to describe the use of the sengkedan technique as an alternative strategy for strengthening numeracy literacy in LCM and GCD learning in elementary schools. Specifically, this article discusses: (1) the concept of numeracy literacy in elementary mathematics learning; (2) the characteristics and procedures of the sengkedan technique; (3) the relationship between the sengkedan technique and numeracy literacy indicators; and (4) the implementation scenario, advantages, and limitations of the sengkedan technique in classroom learning.

METHOD

This study employed a qualitative approach with a conceptual review based on literature study. This method was selected because the article aims to analyze the pedagogical relevance of the sengkedan technique in strengthening numeracy literacy, rather than measuring its empirical effectiveness through classroom experimentation.

The data sources consisted of books on elementary mathematics learning, journal articles on numeracy literacy and mathematics instruction, and policy documents related to the Merdeka Curriculum and numeracy strengthening in elementary schools. The literature was selected based on its relevance to four main themes: numeracy literacy, elementary mathematics learning, LCM and GCD material, and instructional strategies for concept-based mathematics learning.

The data were analyzed using narrative synthesis. The analysis process involved four stages. First, the literature was reviewed to identify key concepts related to numeracy literacy and elementary mathematics learning. Second, the characteristics of the sengkedan technique were examined in relation to the concepts of factors, multiples, and prime numbers. Third, the relationship between the sengkedan technique and numeracy literacy indicators was synthesized. Fourth, the results were organized into thematic descriptions, tables, and classroom implementation scenarios.

The trustworthiness of this conceptual review was maintained through source triangulation and conceptual consistency. Source triangulation was conducted by comparing information from books, journal articles, and policy documents. Conceptual consistency was maintained by ensuring that the analysis of the sengkedan technique remained connected to the principles of numeracy literacy and elementary mathematics learning.

This study has a conceptual scope. Therefore, the findings do not claim empirical improvement in students' learning outcomes. Terms such as strengthening, supporting, and potentially helping are used to indicate conceptual and pedagogical relevance. Further empirical research is needed to test the effectiveness of the sengkedan technique in improving students' numeracy literacy.

Discussion

The results of this conceptual review are organized into six main findings. These findings describe the pedagogical relevance of the sengkedan technique in strengthening numeracy literacy in the learning of Least Common Multiple (LCM) and Greatest Common Divisor (GCD) at the elementary school level. The results include: (1) the numeracy literacy components involved in LCM and GCD learning; (2) students' conceptual difficulties in learning LCM and GCD; (3) the procedural structure of the sengkedan technique; (4) the relationship between the sengkedan technique and numeracy literacy indicators; (5) a classroom implementation scenario; and (6) the advantages, limitations, and pedagogical requirements of the technique.

3.1 Numeracy Literacy Components in LCM and GCD Learning

LCM and GCD learning is closely related to numeracy literacy because it requires students to use number concepts, arithmetic operations, pattern recognition, and problem-solving strategies. Students are not only expected to obtain correct answers, but also to understand the relationship among numbers, explain the role of factors and multiples, and apply the concepts in contextual situations.

Table 1. Numeracy Literacy Components in LCM and GCD Learning

Numeracy Literacy Component	Description in LCM and GCD Learning	Example of Student Activity	Expected Learning Contribution
Number understanding	Students recognize the relationship among numbers, factors, multiples, and prime numbers	Identifying factors of 24 and 36 before using the sengkedan technique	Students understand that numbers can be decomposed and compared based on their divisors and multiples
Arithmetic operation skills	Students use multiplication and	Dividing 24 and 36 by prime numbers	Students strengthen

	division to process numbers systematically	and multiplying prime divisors	multiplication and division fluency
Pattern recognition	Students observe repeated division patterns and prime factor structures	Identifying which prime numbers divide both numbers and which divide only one number	Students distinguish common factors from overall prime factors
Mathematical reasoning	Students explain why certain prime divisors are used for GCD and all prime divisors are used for LCM	Explaining why 2 x 2 x 3 becomes the GCD of 24 and 36	Students develop conceptual reasoning, not only procedural memorization
Problem solving	Students apply LCM and GCD concepts to solve contextual problems	Solving problems about repeated schedules or grouping objects equally	Students understand the practical use of LCM and GCD in daily life
Mathematical communication	Students present and justify their solution steps	Explaining the sengkedan steps to peers or the teacher	Students develop confidence and clarity in communicating mathematical ideas

Description: Table 1 shows that LCM and GCD learning contains several important components of numeracy literacy. The topic does not only involve calculation, but also requires students to understand numerical relationships, recognize patterns, and communicate reasoning. Therefore, the sengkedan technique can be pedagogically relevant if it is used not merely as a fast calculation method, but as a structured learning strategy that helps students connect factors, multiples, division, and multiplication in one meaningful process.

3.2 Students' Conceptual Difficulties in Learning LCM and GCD

The literature review indicates that students' difficulties in learning LCM and GCD commonly arise from weak prerequisite knowledge and procedural teaching practices. Many students can follow steps mechanically but struggle to explain the meaning of factors, multiples, or prime divisors. This condition suggests that students need learning strategies that connect procedures with conceptual understanding.

Table 2. Conceptual Difficulties in LCM and GCD Learning and the Role of the Sengkedan Technique

Students' Difficulties	Possible Causes	Consequences in Learning	Role of the Sengkedan Technique
Confusing factors and multiples	Students memorize definitions without concrete examples	Students incorrectly identify whether a number should be used for GCD or LCM	The ladder structure helps students see the difference between divisors and multiplication results
Difficulty identifying prime numbers	Limited understanding of prime and composite numbers	Students choose incorrect divisors in the calculation process	The technique provides repeated exposure to prime divisors
Weak multiplication and division skills	Insufficient arithmetic fluency	Students make errors in each step of calculation	Repeated division and multiplication strengthen arithmetic practice
Relying on memorization	Teaching focuses on procedures rather than concepts	Students obtain answers but cannot explain the process	The technique can be used to discuss why each divisor is selected

Difficulty solving contextual problems	Students learn LCM and GCD as abstract procedures	Students cannot apply concepts to daily-life situations	The technique can be combined with schedule, grouping, and sharing problems
Low confidence in mathematics	Long procedures make students feel mathematics is difficult	Students become passive and reluctant to solve problems	A shorter and more organized procedure can support student confidence

Description: Table 2 demonstrates that students difficulties in LCM and GCD learning are not limited to calculation errors. They also involve conceptual confusion, weak prerequisite knowledge, and limited ability to connect mathematical procedures with real-life problems. The sengkedan technique can help reduce these difficulties when teachers use it as a visual and conceptual tool. However, if the technique is only taught as a shortcut, students may still memorize steps without understanding the mathematical meaning behind them.

3.3 Procedural Structure of the Sengkedan Technique

The sengkedan technique is a step-by-step division method using prime numbers. The technique allows students to determine LCM and GCD in one process. In this method, the numbers are placed side by side and divided by prime numbers until the final result becomes one. Prime divisors that divide all numbers simultaneously are used to determine the GCD, while all prime divisors used in the process are multiplied to determine the LCM.

Table 3. Determining LCM and GCD of 24 and 36 Using the Sengkedan Technique

Step	Prime Divisor	24	36	Division Condition	Conceptual Meaning
Initial numbers	-	24	36	-	The two numbers are prepared for prime factor division
1	2	12	18	Divides both numbers	2 is a common prime divisor
2	2	6	9	Divides both numbers	2 is again a common prime divisor
3	2	3	9	Divides one number	2 is needed for LCM but not added to GCD
4	3	1	3	Divides both remaining numbers proportionally in the process	3 contributes to the common factor structure
5	3	1	1	Divides one remaining number	3 is needed to complete the LCM process

Description: Table 3 shows that the sengkedan technique enables students to find GCD and LCM in a single organized procedure. The table also illustrates the conceptual difference between GCD and LCM. The GCD is related to prime divisors shared by the numbers, while the LCM is related to all prime divisors needed to reduce the numbers to one. To avoid mechanical learning, teachers need to explain the meaning of each step.

Based on the sengkedan process, the GCD is obtained from the prime divisors that divide both numbers simultaneously: GCD = 2 x 2 x 3 = 12. The LCM is obtained from all prime divisors used in the sengkedan process: LCM = 2 x 2 x 2 x 3 x 3 = 72.

3.4 Relationship between the Sengkedan Technique and Numeracy Literacy Indicators

The sengkedan technique is relevant to numeracy literacy because the process requires students to identify numbers, use arithmetic operations, reason about patterns, solve problems, and explain mathematical procedures. The relationship between the technique and numeracy literacy can be seen in Table 4.

Table 4. Alignment between the Sengkedan Technique and Numeracy Literacy Indicators

Numeracy Literacy Indicator	Activity in the Sengkedan Technique	Learning Process	Expected Student Response
Understanding numbers and operations	Identifying the numbers to be analyzed and dividing them by prime numbers	Students connect numbers with multiplication and division structures	Students can explain that 24 and 36 can be decomposed using prime divisors
Applying mathematical procedures	Following the division ladder step by step	Students perform repeated division and multiplication	Students can complete the sengkedan process accurately
Reasoning and pattern recognition	Observing which prime numbers divide both numbers or only one number	Students compare the role of each prime divisor	Students can distinguish between divisors for GCD and divisors for LCM
Problem solving	Using the results of GCD or LCM to answer contextual problems	Students apply results to situations such as grouping or repeated schedules	Students can determine when to use GCD and when to use LCM
Mathematical communication	Explaining the solution process orally or in writing	Students justify each step and final answer	Students can present their reasoning clearly
Reflection and error correction	Reviewing whether each division step is correct	Students identify mistakes in divisor selection or multiplication	Students can revise their solution independently or with peer support

Description: Table 4 indicates that the sengkedan technique supports numeracy literacy because it requires more than computation. Students are encouraged to understand number structures, apply operations, identify patterns, solve problems, and communicate their reasoning. The technique can therefore be positioned as a bridge between procedural fluency and conceptual understanding.

3.5 Classroom Implementation Scenario Using the Sengkedan Technique

The sengkedan technique can be implemented through a gradual learning sequence. The teacher should begin with contextual problems, review prerequisite concepts, demonstrate the procedure, guide students in practice, and provide opportunities for discussion and reflection. This sequence is important because the technique requires students to understand prime numbers, multiplication, division, factors, and multiples.

Table 5. Classroom Implementation Scenario for the Sengkedan Technique

Learning Stage	Teacher Activity	Student Activity	Learning Purpose	Assessment Focus
Apperception	Presents a contextual problem, such as two bells ringing at different intervals or objects divided into equal groups	Responds to guiding questions and relates the problem to daily life	Connect LCM and GCD to real-life situations	Students initial understanding of the problem context
Prerequisite review	Reviews factors, multiples,	Identifies examples of	Strengthen prior	Accuracy in identifying

	prime numbers, multiplication, and division	factors, multiples, and prime numbers	knowledge needed for the sengkedan technique	factors, multiples, and prime numbers
Demonstration	Demonstrates the sengkedan technique using the board, number cards, or visual tables	Observes the division process and asks questions	Introduce the procedure visually and systematically	Students ability to follow the sequence of steps
Guided practice	Provides simple problems involving two numbers	Solves problems in pairs with teacher guidance	Train procedural fluency and accuracy	Correctness of division steps and final results
Group discussion	Provides contextual problems involving LCM and GCD	Discusses strategies and presents solutions	Develop reasoning, collaboration, and mathematical communication	Students explanation of when to use LCM or GCD
Independent practice	Gives individual tasks with gradual difficulty	Solves problems independently	Measure individual understanding	Accuracy, neatness, and reasoning in written work
Reflection	Asks students to explain the difference between LCM and GCD	Summarizes the lesson and identifies difficulties	Reinforce conceptual understanding	Students ability to explain the meaning of the process

Description: Table 5 presents a classroom implementation scenario that integrates the sengkedan technique with active learning. The sequence begins with contextual problems to help students understand the usefulness of LCM and GCD. Guided practice and group discussion provide scaffolding, while independent practice and reflection help the teacher assess students understanding.

3.6 Advantages, Limitations, and Pedagogical Requirements of the Sengkedan Technique

The sengkedan technique has several pedagogical advantages, particularly in making LCM and GCD learning more systematic and visual. However, the technique also has limitations. It requires students to have prerequisite knowledge and teacher guidance to prevent mechanical learning.

Table 6. Advantages, Limitations, and Pedagogical Requirements of the Sengkedan Technique

Aspect	Advantages	Limitations	Pedagogical Requirements
Procedure	Provides clear and concise steps for determining LCM and GCD	Students may memorize the steps without understanding the concepts	Teachers must explain the meaning of each division step
Visual structure	Helps students observe number reduction through a ladder-like form	Students may focus only on the form, not the reasoning	Teachers need to connect the visual form with factors and multiples
Time efficiency	Allows LCM and GCD to be found in one process	Speed may dominate over conceptual understanding	Teachers should balance efficiency with reasoning questions
Arithmetic practice	Trains division and multiplication repeatedly	Students with weak arithmetic fluency may make errors	Teachers should provide gradual

			practice from small to larger numbers
Conceptual support	Helps distinguish common factors and all prime factors	Misunderstanding may occur if GCD and LCM rules are not explained	Teachers should compare examples of GCD and LCM explicitly
Classroom flexibility	Can be used with board work, number cards, pair work, or group activities	Less effective if used only through teacher explanation	Teachers should combine it with active learning and contextual problems
Numeracy strengthening	Supports reasoning, pattern recognition, and communication	Does not automatically improve numeracy without reflection	Teachers should include discussion, explanation, and formative assessment

Description: Table 6 shows that the sengkedan technique has strong potential as an instructional strategy, but its success depends on how it is implemented. The technique should be supported by conceptual explanation, gradual exercises, contextual problems, and formative assessment so that students understand not only how to use the technique, but also why it works.

3.7 Conceptual Synthesis of Findings

Based on the tables and descriptions above, the conceptual synthesis of this study shows that the sengkedan technique can support numeracy literacy through three main pathways. First, it strengthens students' understanding of number relationships by connecting factors, multiples, and prime numbers. Second, it improves procedural organization by allowing students to solve LCM and GCD problems through a systematic sequence. Third, it provides opportunities for reasoning and communication when students are asked to explain each step and apply the result to contextual problems.

Table 7. Conceptual Synthesis of the Sengkedan Technique for Numeracy Literacy Strengthening

Main Pathway	Learning Mechanism	Numeracy Aspect Supported	Classroom Implication
Number relationship strengthening	Students decompose numbers using prime divisors	Number sense and factor-multiple understanding	Teachers should begin with factor, multiple, and prime number exploration
Procedural organization	Students follow step-by-step division to determine LCM and GCD	Arithmetic fluency and systematic problem solving	Teachers should use visual tables and gradual practice
Conceptual differentiation	Students identify which divisors are used for GCD and which for LCM	Reasoning and pattern recognition	Teachers should ask students to compare GCD and LCM rules
Contextual application	Students apply results to real-life problems	Problem solving and mathematical interpretation	Teachers should provide problems about schedules, grouping, and sharing
Mathematical communication	Students explain the process orally or in writing	Communication and reflective thinking	Teachers should include peer discussion and presentation

Error analysis	Students check the accuracy of division and multiplication steps	Accuracy and self-correction	Teachers should use formative assessment and guided feedback

Description: Table 7 summarizes the conceptual contribution of the sengkedan technique to numeracy literacy. The technique can support number sense, arithmetic fluency, reasoning, problem solving, and mathematical communication when implemented through meaningful learning activities. Students should be guided to understand the mathematical meaning behind each step, not merely to reproduce the procedure.

3.8 Summary of Results

Overall, the results of this conceptual review indicate that the sengkedan technique is pedagogically relevant for teaching LCM and GCD in elementary schools. The technique provides a structured and visual procedure that can help students connect prime numbers, factors, multiples, division, and multiplication. Its relevance to numeracy literacy lies in its potential to support number understanding, operation skills, pattern recognition, problem solving, mathematical communication, and reflective thinking.

However, the sengkedan technique should be implemented carefully. Students need prerequisite knowledge of prime numbers, multiplication, and division. Teachers also need to provide contextual problems, visual support, discussion opportunities, and formative assessment. Therefore, the sengkedan technique is best understood as a conceptual and procedural aid for numeracy literacy, not merely as a shortcut for obtaining LCM and GCD answers.

DISCUSSION

The results of this conceptual review indicate that the sengkedan technique has pedagogical relevance for strengthening numeracy literacy in elementary mathematics learning. Its relevance lies in the fact that the technique combines number understanding, arithmetic operations, pattern recognition, and problem solving in one structured process. These elements are closely related to the development of numeracy literacy, which emphasizes the ability to use mathematical concepts in meaningful and contextual situations (Kemendikbud, 2022; OECD, 2023; Wijaya, 2022).

In learning LCM and GCD, students often experience difficulty because the material requires them to connect several mathematical concepts simultaneously. They need to understand factors, multiples, prime numbers, division, and multiplication. If these concepts are taught separately without clear connections, students may rely on memorization. The sengkedan technique helps connect these concepts through a visual and procedural structure. This is consistent with mathematics learning principles that emphasize conceptual understanding, procedural fluency, and mathematical reasoning as interrelated competencies (NCTM, 2014; Van de Walle et al., 2019).

The sengkedan technique also provides an opportunity for teachers to shift learning from procedural memorization to conceptual reasoning. When students observe which prime numbers divide both numbers and which divide only one number, they begin to understand the difference between GCD and LCM. This distinction is important because many students can find answers mechanically but cannot explain why the answer is correct. Mathematics learning should therefore provide opportunities for students to explain strategies, justify answers, and compare solution procedures (Gersten et al., 2009; Reys et al., 2019).

From the perspective of numeracy literacy, the sengkedan technique supports at least five competencies: understanding numerical relationships, using operations accurately, recognizing patterns, solving problems, and communicating mathematical reasoning. These competencies are aligned with the purpose of numeracy learning in elementary schools, which emphasizes the use of mathematical knowledge to interpret and solve problems (Badan Standar, Kurikulum, dan Asesmen Pendidikan, 2024; Kemendikbudristek, 2023). In this sense, the sengkedan technique is not merely a shortcut for finding LCM and GCD, but can function as a structured learning strategy to strengthen students' number sense.

However, the technique should not be introduced as a shortcut without conceptual preparation. Students need prior understanding of prime numbers, multiplication, and division.

Teachers should first use concrete examples, visual representations, and contextual problems before introducing the sengkedan procedure. This is in line with the view that elementary mathematics learning should move from concrete experiences to visual representations and then to symbolic procedures (Clements & Sarama, 2020; Heruman, 2020; Susanto, 2020).

For example, before finding the LCM of two numbers, students can be asked to solve problems related to repeated schedules, such as determining when two bells ring together or when two activities occur on the same day. Before finding the GCD, students can solve grouping problems involving equal distribution, such as dividing objects into equal groups. Contextual problems help students understand why LCM and GCD are useful in daily life, not merely as abstract procedures (Nunes et al., 2016; Wahyudi & Anugraheni, 2021).

The sengkedan technique is also relevant to the Merdeka Curriculum because it allows flexible, active, and concept-based learning. Teachers can adapt the technique according to students' readiness. Students who still struggle can be guided using smaller numbers and visual aids, while students who are more advanced can be challenged with contextual problems involving more than two numbers. Differentiated support of this kind is important because elementary students have different levels of arithmetic fluency and conceptual readiness (Kemendikbudristek, 2023; Mullis et al., 2020).

In classroom implementation, teachers can combine the sengkedan technique with number cards, group discussion, peer explanation, and formative assessment. Such combinations can make learning more interactive and reduce students' dependence on teacher explanation alone. Students can be asked to work in pairs, compare their sengkedan steps, identify errors, and explain the difference between LCM and GCD. These activities support mathematical communication and collaborative learning, which are important components of effective mathematics instruction (NCTM, 2014; Reys et al., 2019).

Nevertheless, the technique has limitations. If students do not master prerequisite arithmetic skills, they may make mistakes in division or multiplication. In addition, if teachers emphasize speed too much, learning may become mechanical. Therefore, successful implementation requires gradual practice, formative assessment, and opportunities for students to explain their reasoning. Assessment should not only focus on the correctness of the final answer but also on students' ability to explain the process and meaning of each step (Gersten et al., 2009; Purpura & Lonigan, 2015).

Thus, the sengkedan technique can be positioned as an alternative strategy for strengthening numeracy literacy, particularly in LCM and GCD learning. Its use should be integrated with meaningful learning activities, not separated from conceptual explanation and contextual problem solving. Further empirical research is needed to examine whether the sengkedan technique significantly improves students' numeracy literacy, learning motivation, accuracy, and mathematical reasoning in real classroom settings.

CONCLUSIONS

Based on this conceptual review, the sengkedan technique can be used as an alternative instructional strategy to strengthen elementary school students' numeracy literacy in LCM and GCD learning. The technique helps simplify the process of finding LCM and GCD through step-by-step division using prime numbers. It also has the potential to support students' understanding of factors, multiples, arithmetic operations, and mathematical reasoning.

The sengkedan technique is relevant to numeracy literacy because it involves number understanding, operation skills, pattern recognition, problem solving, and mathematical communication. However, its implementation should be supported by prerequisite knowledge, gradual practice, visual media, contextual problems, and formative assessment. Teachers should avoid presenting the technique merely as a shortcut, because this may cause students to memorize procedures without understanding concepts.

Further empirical research is needed to examine the effectiveness of the sengkedan technique in improving students' numeracy literacy. Such research may use classroom action research, quasi-experimental design, or mixed methods to measure students' learning outcomes, motivation, accuracy, and mathematical reasoning before and after the implementation of the technique.

IMPLICATIONS

This article has practical implications for elementary school mathematics teachers. The sengkedan technique can be used as a simple and low-cost strategy to teach LCM and GCD. Teachers can combine it with number cards, group work, contextual problems, and formative assessment to make learning more active and meaningful. For schools, this technique can become part of numeracy strengthening programs, especially in classes where students still have difficulty understanding number relationships. For future researchers, this conceptual article can serve as a basis for developing empirical studies that test the effectiveness of the sengkedan technique in real classroom settings.

LIMITATIONS

This article is limited to a conceptual review based on literature study. It does not present empirical classroom data such as pretest-posttest scores, observation results, student interviews, or teacher reflections. Therefore, the findings should be understood as conceptual and pedagogical arguments, not as evidence of measurable improvement in students' numeracy literacy. Future studies are recommended to involve students directly and collect empirical data to determine whether the sengkedan technique significantly improves students' understanding of LCM and GCD, arithmetic accuracy, learning motivation, and numeracy literacy.

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