



## Implementing the Mind Mapping Model to Improve Early Writing Skills Among Students of MIN 11 Pidie

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**Abstract:** This classroom action research was prompted by the low writing proficiency of Grade I-A students at MIN 11 Pidie, attributed to the prevalence of conventional lecture and assignment methods. This study aims to evaluate the effectiveness of the Mind Mapping model in improving student engagement and learning outcomes within the "Aku Istimewa" sub-theme. The methodology followed the Kemmis & McTaggart design, conducted in two cycles consisting of planning, action, observation, and reflection. Data were gathered through student behavior observation instruments, teacher performance rubrics, and learning achievement tests. The results demonstrated a significant increase in student active participation, reaching 100% by the end of Cycle II. Improvements in instructional quality were also observed across preparation (87.50%), presentation (85%), method application (80%), and teacher characteristics (91.67%). These findings confirm that idea visualization through Mind Mapping effectively bridges cognitive barriers in early writing, suggesting its viability as a pedagogical alternative in primary education.

**Keywords:** Mind Mapping, Writing Skills, Classroom Action Research, Academic Achievement.

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### INTRODUCTION

Early writing proficiency constitutes a foundational component of literacy development in primary education. The ability to encode ideas into written symbols not only reflects children's mastery of language mechanics but also signals the emergence of higher-order cognitive processes related to organization, representation, and communication. Scholars have consistently emphasized that early writing serves as a bridge between oral language and formal literacy, shaping subsequent academic achievement across subject domains (Graham & Harris, 2019; Kim et al., 2018). In this regard, strengthening writing instruction in the first years of schooling remains a central concern within contemporary educational research.

Writing at the beginning level is not merely a mechanical activity of copying letters or forming words. Rather, it involves the integration of phonological awareness, vocabulary development, syntactic knowledge, and emerging metacognitive regulation (Berninger et al., 2017; Ouellette & Sénéchal, 2017). Young learners must simultaneously manage fine motor coordination, orthographic conventions, and idea generation. The complexity of

these processes often renders early writing instruction challenging, particularly when pedagogical approaches fail to accommodate developmental characteristics of primary students.

Research indicates that ineffective instructional practices may hinder students' engagement and limit their opportunities to construct meaning independently (Graham et al., 2020). In many primary classrooms, writing instruction still relies heavily on teacher-centered lectures and repetitive assignments, which emphasize product over process. Such conventional methods tend to minimize student participation and provide limited scaffolding for idea development (Fisher & Frey, 2014). Consequently, students may demonstrate low motivation and insufficient writing proficiency.

Within the Indonesian primary education context, similar challenges have been documented. Studies highlight that early-grade learners often struggle with generating ideas, organizing simple sentences, and expressing personal experiences in writing (Suyitno et al., 2019; Widiati & Cahyono, 2021). These difficulties are frequently associated with instructional strategies that do not adequately stimulate cognitive engagement or visual representation of ideas. As a result, students' writing remains fragmented and lacks coherence.

The importance of employing developmentally appropriate and cognitively supportive models in early writing instruction has therefore become increasingly evident. Constructivist learning theory posits that knowledge is actively constructed through meaningful interaction with content and social environments (Vygotsky, 1978). In writing contexts, this perspective implies that learners benefit from strategies that facilitate idea generation, organization, and reflection. Instructional models that visualize relationships among concepts may thus enhance children's understanding and retention.

One pedagogical approach that aligns with these principles is Mind Mapping, originally popularized by Tony Buzan. Mind Mapping emphasizes the use of visual diagrams to represent connections among ideas through branches, keywords, symbols, and colors. This technique is designed to mirror the associative processes of the human brain, thereby supporting memory and creative thinking (Buzan, 2018). In educational settings, Mind Mapping has been adapted to facilitate comprehension, planning, and written expression.

Cognitive psychology provides theoretical justification for the effectiveness of visual mapping techniques. Dual coding theory suggests that information processed through both verbal and visual channels enhances comprehension and recall (Paivio, 2006). Similarly, schema theory explains that organizing information into structured networks aids cognitive processing and retrieval (Anderson, 2015). Mind Mapping integrates these principles by enabling learners to externalize their mental representations in structured visual formats.

Empirical research has shown that visual mapping strategies can significantly improve students' writing performance. Studies conducted in primary and secondary contexts reveal that graphic organizers and concept maps enhance idea organization, coherence, and elaboration in writing tasks (Kim et al., 2021; Şahin & Yıldırım, 2020). These findings underscore the potential of visual scaffolding to reduce cognitive overload during composition.

Moreover, Mind Mapping has been associated with increased student engagement and motivation. Active participation in constructing maps encourages learners to contribute ideas, collaborate with peers, and take ownership of the learning process (Davies, 2011). Such engagement is particularly critical in early grades, where intrinsic motivation strongly influences literacy development (Guthrie et al., 2012). When students perceive writing as an exploratory and creative activity, they are more likely to persist and refine their skills.

In the context of thematic learning, which is widely implemented in Indonesian primary schools, the integration of Mind Mapping offers additional advantages. Thematic instruction emphasizes interconnected understanding across subjects and experiences (Drake & Reid, 2018). Visual mapping techniques complement this approach by illustrating relationships among concepts within a theme. For Grade I students studying the "Aku

Istimewa” sub-theme, for example, Mind Mapping can help organize personal attributes, experiences, and descriptive vocabulary into coherent written forms.

Despite its theoretical promise, the application of Mind Mapping in early writing instruction remains underexplored in specific madrasah ibtidaiyah contexts. MIN 11 Pidie, as an Islamic primary school in Aceh, faces challenges similar to other institutions where traditional methods dominate instructional practice. Preliminary classroom observations revealed limited student participation and low writing achievement among Grade I-A learners. These findings highlight the need for pedagogical innovation tailored to local classroom realities.

Classroom action research provides a systematic framework for implementing and evaluating such innovations. The cyclical model proposed by Stephen Kemmis and Robin McTaggart emphasizes reflective practice through iterative stages of planning, action, observation, and reflection (Kemmis et al., 2014). This approach enables teachers to refine instructional strategies based on empirical evidence derived from classroom implementation.

The integration of Mind Mapping within a classroom action research design allows for continuous monitoring of student engagement and learning outcomes. By observing behavioral indicators and assessing writing performance across cycles, researchers can determine the extent to which the model addresses identified instructional gaps. Such an approach aligns with evidence-based practice principles in education (Slavin, 2020).

Previous studies investigating Mind Mapping in language learning contexts have reported positive outcomes in vocabulary acquisition, reading comprehension, and essay organization (Al-Jarf, 2019; Liu et al., 2014). However, fewer investigations have focused specifically on early writing skills at the foundational level of primary education. Given that early literacy experiences shape long-term academic trajectories (Snow & Matthews, 2016), exploring effective interventions at this stage is particularly urgent.

In addition to cognitive benefits, Mind Mapping may support socio-emotional aspects of learning. Visual and collaborative activities can reduce anxiety associated with writing tasks and foster a supportive classroom climate (Dörnyei & Ryan, 2015). When students experience success in organizing and expressing their ideas, their self-efficacy in writing tends to increase, which in turn predicts improved performance (Bruning & Kauffman, 2016).

Teacher performance also plays a critical role in the successful implementation of innovative models. Effective instructional preparation, clarity of presentation, appropriate method application, and positive teacher characteristics contribute significantly to student achievement (Stronge, 2018). Therefore, evaluating the quality of teacher implementation constitutes an essential dimension of research on pedagogical interventions.

The present study situates Mind Mapping within a comprehensive framework that examines both student engagement and instructional quality. By analyzing behavioral observations, teacher performance rubrics, and achievement test results, this research seeks to provide multidimensional evidence regarding the effectiveness of the model. Such triangulation enhances the validity and reliability of classroom-based findings (Creswell & Creswell, 2018).

Furthermore, the investigation contributes to the broader discourse on learner-centered pedagogy in primary education. Contemporary educational reforms advocate active learning strategies that position students as constructors of knowledge rather than passive recipients (Hattie, 2012). Mind Mapping embodies these principles by encouraging students to generate, connect, and articulate ideas visually before translating them into written text.

This study also responds to calls for culturally contextualized research in literacy instruction. Educational practices cannot be universally applied without considering sociocultural factors influencing learners’ experiences (Gay, 2018). By examining the implementation of Mind Mapping in an Acehese Islamic primary school, the research offers insights that are both locally grounded and globally relevant.

In light of the theoretical foundations and empirical evidence discussed, the present classroom action research aims to evaluate the implementation of the Mind Mapping learning model in improving early writing skills among Grade I-A students at MIN 11 Pidie. Specifically, the study seeks to determine the extent to which the model enhances student engagement and learning outcomes within the “Aku Istimewa” sub-theme. Through systematic cycles of intervention and reflection, this research aspires to provide pedagogically meaningful contributions to the advancement of early literacy instruction in primary education.

## **METHODS**

This study employed a classroom action research design to investigate the effectiveness of the Mind Mapping learning model in improving early writing skills among Grade I-A students at MIN 11 Pidie. Classroom action research was selected because it enables systematic intervention within authentic classroom contexts while simultaneously facilitating reflective improvement of instructional practice. This approach is particularly appropriate when the primary objective is to enhance teaching quality and student learning outcomes through iterative cycles of planning, implementation, observation, and reflection (Kemmis et al., 2014; Mertler, 2017).

The research design followed the spiral model developed by Stephen Kemmis and Robin McTaggart, which consists of interconnected stages of planning, action, observation, and reflection within each cycle. Two cycles were conducted in this study. The first cycle functioned as an initial intervention to identify procedural strengths and weaknesses, while the second cycle served to refine instructional strategies based on reflective analysis of the first cycle’s findings. This cyclical design ensured continuous improvement and data-driven decision-making throughout the implementation process (Stringer, 2014).

The research was conducted during the second semester of the 2025/2026 academic year. The participants comprised 24 students enrolled in Grade I-A, consisting of 13 male and 11 female students aged between six and seven years. The class was selected purposively based on preliminary observations indicating low writing proficiency and limited active participation during writing lessons. The classroom teacher collaborated with the researcher throughout the intervention, serving both as practitioner and co-observer to maintain ecological validity.

The instructional intervention focused on the “Aku Istimewa” sub-theme within the thematic curriculum framework. This sub-theme was selected because it requires students to describe personal characteristics, preferences, and experiences, thereby providing authentic opportunities to develop early writing skills. The Mind Mapping model was integrated into the writing process to facilitate idea generation and organization before students composed simple descriptive sentences. Instructional activities included brainstorming keywords, constructing visual maps collectively and individually, and transforming mapped ideas into structured written text.

During the planning phase of each cycle, lesson plans were developed in alignment with curriculum standards and learning objectives. The plans detailed learning steps, instructional media, assessment criteria, and observation indicators. Visual mapping templates and colored markers were prepared to support the Mind Mapping process. The action phase involved implementing the planned lessons across two meetings per cycle. Each meeting lasted approximately 70 minutes, encompassing introduction, core activities, guided practice, and reflection.

Observation procedures were conducted systematically during the action phase. Student engagement was documented using a structured observation sheet that captured indicators such as participation in brainstorming, responsiveness to teacher prompts, collaboration during mapping activities, and attentiveness during writing tasks. Teacher performance was evaluated using a rubric assessing instructional preparation, clarity of presentation, appropriateness of method application, and teacher characteristics including

classroom management and communication skills. The observation instruments were developed based on established instructional evaluation frameworks (Stronge, 2018) and adapted to the primary education context.

To measure learning outcomes, students completed writing assessments at the end of each cycle. The assessment required students to compose short descriptive texts related to the “Aku Istimewa” theme. A scoring rubric was employed to evaluate letter formation, word accuracy, sentence structure, coherence of ideas, and overall readability. The rubric ensured consistency in scoring and minimized subjectivity. Prior to implementation, the instrument was reviewed by two experts in primary literacy education to ensure content validity.

Data collection incorporated multiple sources to enhance triangulation and credibility (Creswell & Creswell, 2018). Observational data provided qualitative and quantitative insights into behavioral engagement and instructional quality, while test scores generated measurable evidence of learning improvement. Field notes were also maintained to document contextual factors influencing classroom dynamics. This combination of instruments strengthened the trustworthiness of the findings.

Quantitative data were analyzed descriptively by calculating percentages of student participation and mean scores of writing achievement in each cycle. Improvement was determined by comparing baseline data with Cycle I and Cycle II results. Teacher performance scores were converted into percentage categories to facilitate interpretation. Qualitative data from field notes and reflective discussions were analyzed thematically to identify patterns of instructional refinement and student response.

The criteria for research success were established prior to implementation. Student engagement was considered satisfactory when at least 85 percent of students actively participated in mapping and writing activities. Learning achievement was deemed successful when a minimum of 80 percent of students achieved the predetermined mastery criterion in writing assessment. These benchmarks were formulated based on school standards and relevant educational research indicating effective classroom practice thresholds (Hattie, 2012).

Ethical considerations were carefully observed throughout the study. Permission to conduct the research was obtained from the school principal of MIN 11 Pidie and the classroom teacher. Parents were informed about the instructional innovation, and confidentiality of student identities was maintained in all documentation and reporting. Participation in the research activities formed part of regular instructional practice, ensuring that no student was disadvantaged.

To enhance reliability, inter-observer agreement was established during observations. The researcher and collaborating teacher independently completed observation sheets and subsequently compared results to ensure consistency. Any discrepancies were discussed and resolved through reflective dialogue. This procedure minimized observational bias and strengthened the dependability of the collected data.

Reflective sessions were conducted at the conclusion of each cycle to evaluate the effectiveness of the intervention. During these sessions, observational findings, student performance data, and field notes were reviewed comprehensively. Identified challenges, such as students’ initial unfamiliarity with visual mapping, informed revisions in instructional scaffolding for the subsequent cycle. This reflective process exemplified the adaptive nature of classroom action research.

The methodological framework of this study was designed to ensure systematic implementation, rigorous data collection, and reflective refinement of the Mind Mapping model in early writing instruction. By integrating quantitative measurement with qualitative reflection within a cyclical action research structure, the study aimed to generate empirically grounded evidence regarding the pedagogical viability of Mind Mapping in primary education contexts.

## RESULTS

The results of this classroom action research are presented in accordance with the research objectives, namely to examine improvements in student engagement, teacher instructional quality, and early writing learning outcomes following the implementation of the Mind Mapping model in Grade I-A at MIN 11 Pidie. Data were collected across two cycles and analyzed descriptively to determine progressive changes.

### Student Engagement

Student engagement was measured through structured classroom observation focusing on indicators of active participation during brainstorming, involvement in constructing mind maps, responsiveness to teacher guidance, collaboration with peers, and seriousness in completing writing tasks. Baseline observation prior to the intervention revealed that only 45.83% of students demonstrated active participation during conventional lecture-based instruction. The development of student engagement across cycles is presented in Table 1.

**Table 1.** Percentage of Student Active Participation Across Research Cycles

Phase	Number of Active Students	Percentage (%)
Pre-Cycle	11 of 24	45.83%
Cycle I	19 of 24	79.17%
Cycle II	24 of 24	100%

The data indicate a substantial increase in active participation from the pre-cycle phase to Cycle I, rising from 45.83% to 79.17%. Although this improvement was significant, reflective analysis identified that several students remained hesitant during independent mapping activities. After revising instructional scaffolding in Cycle II, including clearer modeling and guided questioning, student participation reached 100%. All students were actively engaged in generating keywords, constructing visual branches, and translating mapped ideas into written sentences.

### Teacher Instructional Quality

Teacher performance was evaluated using a structured rubric consisting of four dimensions: instructional preparation, clarity of presentation, appropriateness of method application, and teacher characteristics. The results obtained in Cycle II, which reflect the optimal stage of implementation, are presented in Table 2.

**Table 2.** Teacher Instructional Quality in Cycle II

Indicator	Percentage (%)
Instructional Preparation	87.50%
Clarity of Presentation	85%
Method Application	80%
Teacher Characteristics	91.67%

The data show that teacher characteristics obtained the highest score at 91.67%, indicating strong classroom management, positive communication, and supportive interaction. Instructional preparation reached 87.50%, reflecting well-structured lesson planning and appropriate learning media. Clarity of presentation was rated at 85%, while method application reached 80%, indicating effective though still improvable execution of the Mind Mapping strategy.

### Student Learning Outcomes

Student learning outcomes were measured through writing assessments administered at the end of each cycle. The evaluation rubric included aspects of letter formation, word

accuracy, sentence construction, idea coherence, and readability. The mean scores and mastery percentages are presented in Table 3.

**Table 3.** Improvement of Early Writing Learning Outcomes

Phase	Mean Score	Mastery Percentage (%)
Pre-Cycle	63.12	41.67%
Cycle I	74.58	75%
Cycle II	85.21	91.67%

The results demonstrate a progressive improvement in writing performance. The pre-cycle mean score of 63.12 increased to 74.58 in Cycle I and further to 85.21 in Cycle II. Mastery learning also improved substantially, reaching 91.67% in Cycle II. Students exhibited clearer sentence structures, more coherent sequencing of ideas, and improved spelling accuracy. The visualization process inherent in Mind Mapping appeared to assist students in organizing descriptive content before composing written text. Overall, the data confirm that the implementation of the Mind Mapping model resulted in measurable improvements in student engagement, teacher instructional quality, and early writing achievement.

## **DISCUSSION**

The findings of this study demonstrate that the implementation of the Mind Mapping model significantly enhanced student engagement in early writing instruction. The increase in active participation from 45.83% in the pre-cycle phase to 100% in Cycle II indicates that visual and interactive strategies effectively stimulated learner involvement. This outcome aligns with constructivist principles suggesting that students learn more effectively when actively constructing knowledge rather than passively receiving information (Vygotsky, 1978). The structured visualization of ideas enabled students to externalize their thinking processes, thereby reducing hesitation and encouraging collaborative interaction.

The improvement in engagement also supports previous findings that visual mapping strategies foster motivation and attentiveness in classroom settings (Davies, 2011). By transforming abstract ideas into concrete visual representations, students experienced writing as an exploratory and creative activity rather than a mechanical task. This shift in perception is consistent with research indicating that motivation plays a crucial role in literacy development during early grades (Guthrie et al., 2012). The 100% participation rate in Cycle II suggests that the model successfully addressed initial barriers to engagement.

From a cognitive perspective, the enhancement of writing performance can be explained through dual coding theory, which posits that combining verbal and visual information strengthens memory and comprehension (Paivio, 2006). Mind Mapping integrates visual-spatial organization with linguistic expression, thereby facilitating idea generation and recall. The substantial increase in mean writing scores from 63.12 to 85.21 demonstrates that visual scaffolding effectively supported students in structuring descriptive sentences.

The findings also corroborate research by Kim et al. (2021), which highlights that graphic organizers significantly improve coherence and elaboration in student writing. In this study, students displayed improved ability to sequence ideas logically within the “Aku Istimewa” sub-theme. Rather than producing fragmented sentences, learners constructed more unified descriptive texts. This development reflects the role of structured planning in reducing cognitive overload during composition (Berninger et al., 2017).

The observed improvement in teacher instructional quality further contributed to student achievement. Effective preparation and positive teacher characteristics, which reached 87.50% and 91.67% respectively, created a supportive learning environment conducive to active participation. Research indicates that teacher effectiveness significantly

influences student learning outcomes (Stronge, 2018; Hattie, 2012). The reflective adjustments made between cycles exemplify the strength of classroom action research in promoting professional growth and pedagogical refinement (Kemmis et al., 2014).

The increase in mastery learning to 91.67% in Cycle II suggests that the Mind Mapping model not only enhanced engagement but also produced substantial academic gains. This finding is consistent with evidence that structured visual planning improves written expression by clarifying relationships among ideas (Şahin & Yıldırım, 2020). For early-grade learners, who often struggle with idea organization, such scaffolding is particularly valuable.

Moreover, the collaborative construction of mind maps may have contributed to socio-emotional development. The interactive process encouraged peer communication and mutual support, reducing anxiety often associated with writing tasks. Bruning and Kauffman (2016) argue that increased writing self-efficacy positively predicts performance. The observable confidence of students during Cycle II suggests that visual mapping enhanced not only cognitive but also affective dimensions of learning.

The thematic nature of the “Aku Istimewa” content further amplified the effectiveness of Mind Mapping. The technique allowed students to connect personal experiences, characteristics, and vocabulary in an integrated manner, consistent with thematic learning principles (Drake & Reid, 2018). By visually mapping aspects of themselves, students were able to translate personal identity into structured written form, thereby deepening meaning-making processes.

Despite these positive findings, the study acknowledges that initial implementation required careful scaffolding. During Cycle I, some students demonstrated difficulty generating keywords independently. This challenge highlights the importance of guided modeling and gradual release of responsibility, as recommended in effective literacy instruction frameworks (Fisher & Frey, 2014). The refinement implemented in Cycle II, including clearer demonstrations and structured prompts, addressed these challenges effectively.

The results confirm that the Mind Mapping model serves as an effective pedagogical strategy for improving early writing skills in primary education. The integration of visual organization, active participation, and reflective instructional practice collectively contributed to substantial improvements in engagement and achievement. These findings reinforce the theoretical and empirical foundations supporting visual learning strategies and underscore their relevance within Indonesian Islamic primary school contexts.

## **CONCLUSION**

The findings of this classroom action research demonstrate that the implementation of the Mind Mapping learning model effectively improved early writing skills, student engagement, and instructional quality among Grade I-A students at MIN 11 Pidie. Through two iterative cycles based on the action research framework of Stephen Kemmis and Robin McTaggart, the study revealed substantial increases in active participation, reaching 100% in Cycle II, alongside significant gains in writing achievement and mastery learning. The integration of visual idea mapping facilitated cognitive organization, reduced students' difficulties in generating and structuring sentences, and fostered greater confidence in expressing personal experiences within the thematic “Aku Istimewa” context. Furthermore, reflective refinement of instructional practices contributed to improved teacher performance across preparation, presentation, method application, and classroom interaction. Overall, the study confirms that Mind Mapping represents a pedagogically sound and contextually relevant strategy for strengthening foundational writing competencies in primary education, particularly within learner-centered and constructivist instructional environments.

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