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IMPROVING FIRST-GRADE STUDENTS' LETTER RECOGNITION THROUGH THE MNEMONIC METHOD IN INDONESIAN LANGUAGE LEARNING: CLASSROOM ACTION RESEARCH IN PEMATANGSIANTAR, INDONESIA

Sanny Fine Christin Hutagaol

Universitas Terbuka, Tangerang Selatan, Indonesia
Corresponding Author: sanny123@gmail.com*

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ABSTRACT

Letter knowledge is the first building block of reading, yet many Indonesian first graders enter school unable to name most letters and some associate reading with fear. This study aimed to improve the letter recognition of first-grade students at UPTD SD Negeri 124391, Pematangsiantar, North Sumatra, through the mnemonic method in Indonesian language lessons. Classroom action research was conducted in two cycles of planning, acting, observing, and reflecting with fourteen students. Mnemonic activities combined an alphabet song, letter-picture slides, letter cards, and group recall games; Cycle II added rewards, ability grouping, and consonant-vowel word cards. Data came from individual oral assessments scored on a four-level rubric, observation, lesson videos, and teacher reflections, and were analysed descriptively. The mean letter-recognition level rose from 1.71 to 3.29, the share of students at the adequate level or above rose from 50% to 100%, and the share meeting the school's minimum criterion of 65 rose from 21.4% to 64.3%. Gains were uneven, and letter writing lagged behind recognition. Mnemonic instruction is an effective, engaging entry point to letter learning, but it needs differentiated follow-up for the weakest learners.

Keywords: *Letter Recognition, Mnemonic Method, Beginning Literacy, Classroom Action Research, Elementary School*

1. INTRODUCTION

Knowing the letters of the alphabet is the first building block of reading. Before children can decode words, they must recognise letter shapes, name them, and link them to sounds, because these connections allow written words to be stored in memory and recognised later (Ehri, 2020). Alphabet knowledge responds to explicit instruction, and children differ widely in how quickly they acquire it (Carr, Bratsch-Hines, Varghese, & Vernon-Feagans, 2020; Roberts, 2021). In Indonesia this foundation matters for national as well as individual reasons. International assessments continue to place the reading performance of Indonesian students among the lower-performing education systems (OECD, 2023), and studies conducted after the COVID-19 school closures document losses in foundational literacy among early graders, particularly in low socio-economic communities (Jazadi et al., 2023). Indonesian teachers also believed that more students would have made better learning gains had face-to-face teaching continued during the pandemic (Novita, Wijayanti, & Wedyaswari, 2023).

Studies of Indonesian first graders describe recurrent difficulties: children do not recognise some letters, confuse letters with similar shapes, and cannot yet read syllables or words (Rahma & Dafit, 2021; Nurani, Nugraha, & Mahendra, 2021). These difficulties stem from internal factors such as motivation and readiness and from external factors such as family support and teaching approaches (Lestari, Ibrahim, Amin, & Kasiyun, 2021), so teachers need deliberate strategies to overcome them (Ramadhan & Tarmini, 2022). Early-grade literacy, however, has often not been taught holistically, and teachers have not always used appropriate instructional models (Apriliana, Hartati, Sunendar, & Rahman, 2022). Affective factors also matter. A study of children aged 8 to 13 found that motivation predicted reading competence more strongly than anxiety did and that higher anxiety was associated with lower motivation (Pollack et al., 2021). Self-determination theory adds that intrinsic and well-internalised extrinsic motivation predict positive learning outcomes and are strengthened when teachers support students' needs for autonomy, competence, and relatedness (Ryan & Deci, 2020).

Mnemonic instruction is a promising response to both the cognitive and the affective sides of this problem. Mnemonics are research-based techniques, such as songs, rhymes, acronyms, and images, that help learners remember information by linking it to familiar cues, and they can make learning enjoyable (Conderman, 2020). An experiment in social studies found that mnemonic devices improved achievement and retention, and students described the activities as fun (Çolak & Aydın, 2022). In Indonesia, classroom action research reported better learning outcomes and retention with the mnemonic method (Atimi, Ningsih, & Lestari, 2023), and a literature review

concluded that mnemonics help elementary students overcome forgetting (Febriana & Alimuddin, 2024). Mnemonics have also improved the reading of hijaiyah letters among children with intellectual disabilities (Karuniasari & Purwandari, 2022), and the singing method, a common musical mnemonic, had a significant effect on first graders' letter recognition (Maghfiroh, Nabillah, & Sholeh, 2025). Two mechanisms help explain these effects. Mnemonic games require learners to retrieve information repeatedly, and retrieval practice produced medium or large benefits in most of the classroom experiments reviewed by Agarwal, Nunes, and Blunt (2021). Pairing letters with pictures and songs also provides several connected representations of the same item, which supports deeper learning (Mayer, 2020). Research on letter instruction adds a further consideration: randomised trials summarised by Roberts (2021) favoured explicit, decontextualised letter teaching over letter teaching embedded in storybooks, real words, or personal names, while also raising the question of how such instruction affects young children's motivation and engagement. Mnemonic games offer a possible answer to that question, because they keep letters explicit while making their practice enjoyable.

Despite this evidence, Indonesian mnemonic studies have mostly addressed content subjects in upper grades or special populations, and few have examined letter recognition in a regular first-grade class while also attending to motivation and children's earlier negative experiences of learning. Few studies report whether gains in letter recognition carry over to syllable reading and letter writing. The present study addresses these gaps at UPTD SD Negeri 124391 in Pematangsiantar, North Sumatra. Preliminary observation showed that many students lacked motivation to memorise letters, that some regarded reading as frightening after harsh treatment in kindergarten, and that individual reading checks revealed low reading ability. The study therefore aimed to improve students' letter recognition through the mnemonic method and to explain how the revisions made between cycles shaped the outcome. Across two cycles, the mean letter-recognition level rose from 1.71 to 3.29 on a four-level scale, and every student reached at least the adequate level, although gains were uneven.

2. RESEARCH METHODE

This study used classroom action research (CAR) following the spiral model of planning, acting, observing, and reflecting associated with Kemmis and McTaggart, as in recent CAR on early reading in Indonesian elementary schools (Erlin & Saptono, 2025). Two cycles were conducted, and the plan for Cycle II was revised on the basis of the reflection on Cycle I (Figure 1).

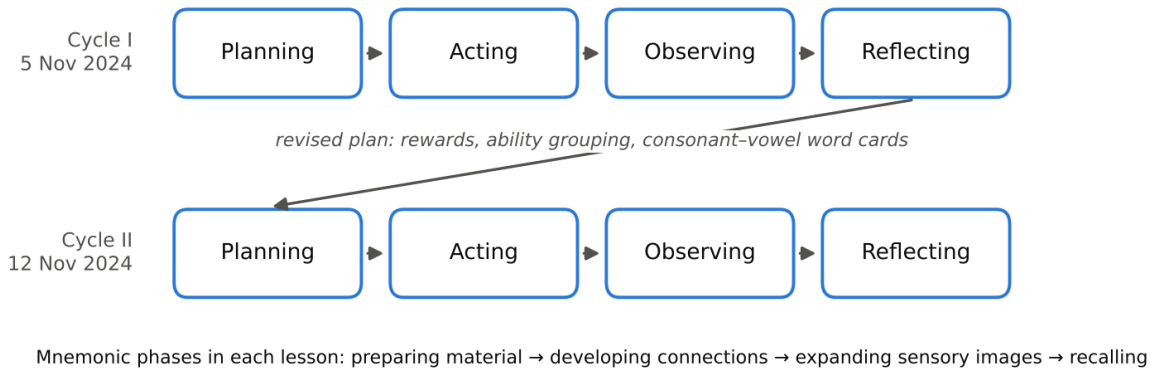


Figure 1. Classroom action research cycles applied in this study

The study took place at UPTD SD Negeri 124391, a public elementary school in Tomuan, Siantar Timur District, Pematangsiantar City, North Sumatra, Indonesia. The participants were all fourteen first-grade (Phase A) students in the 2024/2025 school year. Cycle I took place on 5 November 2024 and Cycle II on 12 November 2024, each in one Indonesian language lesson (08.00–09.15). The lessons used Chapter 1, *Bunyi Apa?* (What Sound?), of the national Grade 1 Indonesian textbook.

Each lesson followed four mnemonic phases. In *preparing the material*, the teacher asked why we need to know letters, projected slides pairing each letter with a picture, and guided students to name the letters slide by slide, supported by an alphabet song. In *developing connections*, students worked in two groups with shuffled letter cards. In *expanding sensory images*, each group arranged the letters from memory. In *recalling*, groups displayed their arrangements and corrected one another. The lesson closed with a song and a daily-review reminder. Cycle II added rewards and praise for students who recalled letters, ability grouping with guided support, word cards combining consonants with vowels, arranging letters to match pictures, and a competitive oral quiz.

Each student was assessed individually and orally at the end of each cycle. Letter recognition was scored on a four-level rubric: 1 = naming up to about five letters, 2 = five to twelve letters, 3 = more than twelve letters, and 4 = all letters. Reading *ba-, bi-, bu-, be-, bo-* syllables and writing letters were rated on the same four-level scale (1 = poor, 2 = adequate, 3 = good, 4 = very good). Lesson videos and teacher reflections complemented the scores, which were analysed descriptively with Equations (1)–(3).

$$S = \frac{rubric\ level\ obtained}{4} \times 100 \quad (1)$$

$$\overline{X} = \frac{\sum X}{N} \quad (2)$$

$$K = \frac{n}{N} \times 100\% \quad (3)$$

In these equations, *S* is the score on a 0–100 scale, $\overline{X}$ the class mean, *ΣX* the sum of students' levels or scores, *N* the number of students, *n* the number of students meeting the criterion, and *K* the percentage of classical mastery. The original classroom report counted a student as having mastered the material at level 2 (adequate) or above, whereas the school's minimum mastery criterion (*Kriteria Ketuntasan Minimal*, KKM) is 65, which corresponds to level 3 or above after conversion. Both criteria are reported for transparency. Students' names are replaced with the codes S1–S14.

3. RESULT AND DISCUSSION

Results of Cycle I

In Cycle I, the teacher prepared a lesson plan, letter–picture slides, letter cards, and an assessment rubric. Students sang the alphabet song, named letters slide by slide, and arranged shuffled letters in two groups before presenting and correcting each other's work. The individual results of both cycles are presented in Table 1.

Table 1. Students' rubric levels by indicator in Cycle I and Cycle II

Student	Letters I	Letters II	Gain	Syllables I	Syllables II	Writing I	Writing II
S1	3	4	+1	3	4	3	4
S2	2	4	+2	2	4	2	4
S3	1	2	+1	1	2	1	4
S4	1	2	+1	1	2	1	1
S5	2	4	+2	2	4	2	4
S6	1	4	+3	1	4	1	4
S7	1	2	+1	1	4	1	2
S8	1	2	+1	1	2	1	1
S9	1	4	+3	1	4	1	1
S10	3	4	+1	3	4	3	4
S11	3	4	+1	3	4	3	4
S12	2	4	+2	1	4	2	4
S13	2	4	+2	2	4	2	4
S14	1	2	+1	1	2	1	2
Mean level	**1.71**	**3.29**	**+1.57**	**1.64**	**3.43**	**1.71**	**3.07**

Levels: 1 = poor, 2 = adequate, 3 = good, 4 = very good. Letters = letter recognition, the main indicator.

In Cycle I, seven of the fourteen students (50%) reached at least level 2 in letter recognition, but only three (21.4%) reached level 3 and none could name all letters. The other seven students (S3, S4, S6, S7, S8, S9, and S14) remained at level 1, naming only about five letters. The mean level was 1.71 (42.9 on a 0–100 scale), and the syllable-reading and letter-writing results followed almost the same pattern. The teacher's reflection showed that students enjoyed arranging letters, even with many errors, and became eager when praised. The hardest task was recalling letters one by one, which students often confused or reversed, and the teacher noted that students who had come to dislike letters after earlier negative experiences were the most difficult to engage. The reflection concluded that Cycle II needed stronger motivation through rewards, ability grouping with closer guidance, and practice linking consonants with vowels.

Results of Cycle II

In Cycle II, the teacher kept the four mnemonic phases and added the planned revisions. Students who recalled letters received small rewards and praise, the class was grouped by ability so that the teacher could guide weaker students more closely, and groups used consonant–vowel word cards to build words that matched pictures. A competitive oral quiz closed the lesson. Observation and video review indicated that students were more active and completed the tasks as expected, and several began to read simple words by combining letters.

As Table 1 shows, every student reached at least level 2 in Cycle II, so mastery under the original criterion rose to 100%. Nine students (64.3%) named all letters and therefore also met the KKM-equivalent criterion, compared with three (21.4%) in Cycle I. The mean level rose to 3.29 (82.1 on a 0–100 scale). Syllable reading improved similarly, from 1.64 to 3.43. Letter writing improved less, from 1.71 to 3.07, and three students remained at level 1. Table 2 summarises the changes, and Figure 2 shows how the distribution of letter-recognition levels shifted.

Table 2. Summary of letter recognition results by cycle

Indicator	Cycle I	Cycle II	Change
Mean level (1–4)	1.71	3.29	+1.57
Mean score (0–100)	42.9	82.1	+39.3
Standard deviation (levels)	0.83	0.99	+0.16
Students at level 1 / 2 / 3 / 4	7 / 4 / 3 / 0	0 / 5 / 0 / 9	-
Mastery, level ≥ 2 (report criterion)	7 (50.0%)	14 (100%)	+50.0 points
Mastery, level ≥ 3 (KKM 65 equivalent)	3 (21.4%)	9 (64.3%)	+42.9 points
Mean syllable reading level	1.64	3.43	+1.79
Mean letter writing level	1.71	3.07	+1.36

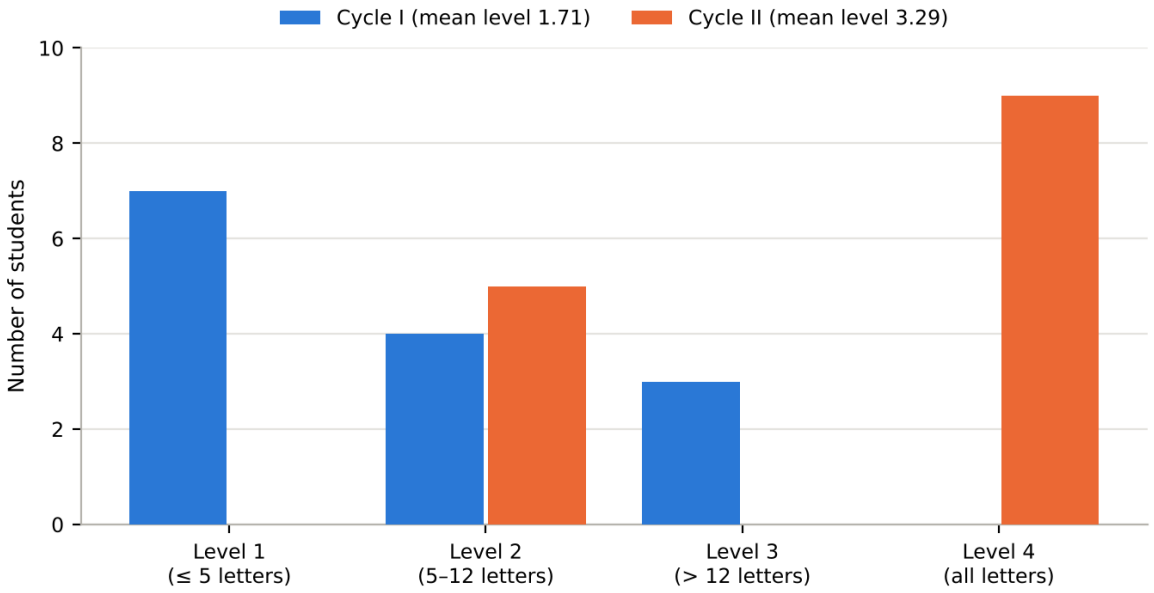


Figure 2. Distribution of letter recognition levels in Cycle I and Cycle II

Three features of these results deserve emphasis. First, every student moved up at least one level, and two students who started at level 1 (S6 and S9) rose to level 4. Second, the gains were uneven. Five of the seven students who began at level 1 rose only to level 2, while all seven students who started at level 2 or 3 reached level 4, so the class split into two groups and the standard deviation increased slightly. Third, recognition did not automatically transfer to writing: S9 could name all letters but remained at level 1 in writing, and S4 and S8 also stayed at level 1 in writing.

Why the Mnemonic Method Supported Letter Learning

The improvement is consistent with research showing that alphabet knowledge responds to explicit, structured instruction (Roberts, 2021) and that letter knowledge is the base on which word reading is built (Ehri, 2020; Petscher et al., 2020). The mnemonic phases turned a list of 26 abstract shapes into a set of memorable experiences. Each letter was met as a picture on a slide, as a sung item in the alphabet song, as a card to be handled, and as an answer to be recalled in front of peers. These multiple, connected cues fit the principle that people learn more deeply from words and pictures together than from words alone (Mayer, 2020). The recall phase and the oral quiz also required students to retrieve letters repeatedly rather than merely look at them, which is the core of retrieval practice, a strategy that produced medium or large benefits in most classroom experiments reviewed by Agarwal et al. (2021).

These findings agree with earlier mnemonic research. They parallel the gains in achievement and retention reported in social studies (Çolak & Aydın, 2022) and biology (Atimi et al., 2023), the improvement in letter reading reported among children with intellectual disabilities (Karuniasari & Purwandari, 2022), and the significant effect of singing on first graders' letter recognition (Maghfiroh et al., 2025). They also support the conclusion that mnemonics help elementary students remember material that would otherwise be forgotten quickly (Febriana & Alimuddin, 2024). The present study extends this evidence to letter recognition in a regular Indonesian first-grade class and shows that the effect extended to syllable reading. The size of the change also compares well with the singing study by Maghfiroh et al. (2025), whose experimental group showed an average normalised gain of about 0.50, a moderate effect.

The parallel rise in syllable reading, from 1.64 to 3.43, is theoretically important. Letters become useful for reading only when they are connected to the sounds they represent and blended into larger units (Ehri, 2020). The consonant–vowel word cards introduced in Cycle II gave students this link: after naming *b* and *a*, they read *ba* and then built a word that matched a picture. Because Indonesian words are built largely from regular consonant–vowel syllables, a small set of well-remembered letters quickly unlocks many syllables, which may explain why some students, such as S7, read syllables better than their letter-recognition level would predict. Mnemonic support for letter names should therefore be followed quickly by practice in using those letters to read and build syllables, so that memorised names do not remain isolated facts.

Motivation and Emotional Safety

Mnemonic techniques alone did not produce the full effect, because the same phases were used in Cycle I, when half of the class remained at the lowest level. The main changes in Cycle II were motivational and organisational: rewards and praise, closer guidance in ability groups, and a game-like quiz. This pattern agrees with evidence that motivation predicts reading competence more strongly than anxiety and that anxious children tend to be less motivated (Pollack et al., 2021). For students who associated letters with earlier harsh treatment, a playful, song-based and praise-rich lesson may have lowered the emotional cost of trying. Mnemonics are often described by teachers and students as fun (Conderman, 2020; Çolak & Aydın, 2022), which matters when the main barrier is reluctance rather than inability.

The teacher's report that some children feared reading after harsh treatment in kindergarten deserves particular attention. For these children, the first task of a first-grade teacher is to rebuild a sense of safety around letters before expecting rapid progress. Group arrangement of letter cards, in which mistakes were corrected by peers in a game rather than by the teacher in front of the class, and singing together allowed reluctant students to take part without being singled out. Supporting relatedness in this way is one of the conditions under which motivation becomes more autonomous (Ryan & Deci, 2020). Future cycles could add short individual conversations with these students and their parents to identify which activities they feel comfortable with.

The use of rewards deserves a cautionary note. Self-determination theory holds that intrinsic motivation and well-internalised extrinsic motivation, rather than externally controlled motivation, predict lasting positive outcomes, and that these forms are strengthened when teachers support students' autonomy, competence, and relatedness (Ryan & Deci, 2020). Rewards are therefore best used as informational recognition of progress, for example praising a child for recalling more letters than yesterday, and should be phased out as students experience competence and enjoyment in reading itself.

Uneven Gains and the Need for Differentiation

The uneven gains carry an important lesson. Five students moved from naming about five letters to naming five to twelve letters, which is real progress but still leaves them far from full alphabet knowledge. Research on alphabet learning shows that children differ widely in how fast they acquire letter names (Carr et al., 2020), and Indonesian studies trace beginning reading difficulties to a mix of individual and environmental causes (Lestari et al., 2021; Nurani et al., 2021). The gap between recognition and writing suggests that some students learned to recognise letter shapes before they

could produce them, and that writing needs its own explicit practice. These students need what Fletcher, Savage, and Vaughn (2021) describe as instruction differentiated to individual learners: short daily sessions in small groups, continued use of the mnemonic cues that worked, explicit letter formation practice, and frequent checks of progress. Level-appropriate teaching with continuous assessment has helped low-performing early graders elsewhere in Indonesia (Jazadi et al., 2023).

Implications for Early-Grade Teaching

The study suggests a practical sequence for first-grade teachers. Lessons can begin with a short song and letter–picture slides, move to hands-on arrangement of letter cards in groups, and end with recall games and a brief oral check. Teachers can then use the oral check to form ability groups for the next lesson, provide encouragement that recognises effort and progress, and add letter-writing practice for students whose recognition outpaces their writing. The materials are inexpensive and fit within the national textbook. Because early-grade literacy is often not taught holistically (Apriliana et al., 2022), and because Indonesia continues to face low reading performance (OECD, 2023), approaches that combine memory support, motivation, and differentiation in ordinary classrooms are worth wider use. The individual oral checks used in this study are also a simple form of formative assessment. Recording each child's level after every lesson takes only a few minutes in a class of fourteen, yet it showed the teacher exactly which students needed regrouping and which needed writing practice, information that a single class average would have hidden.

4. CONCLUSION

This classroom action research shows that the mnemonic method improved the letter recognition of first-grade students at UPTD SD Negeri 124391, Pematangsiantar. Across two cycles, the mean letter-recognition level rose from 1.71 to 3.29, the share of students at the adequate level or above rose from 50% to 100%, and the share meeting the school's minimum mastery criterion rose from 21.4% to 64.3%. Syllable reading improved in parallel. The mnemonic phases of songs, letter–picture slides, letter cards, and group recall gave students multiple cues and repeated retrieval, but the decisive change between cycles was motivational and organisational: praise and rewards, ability grouping with closer guidance, and game-like recall turned a feared task into an enjoyable one. The gains were uneven, however. Five students moved only to the adequate level, and letter writing lagged behind recognition.

Theoretically, the results suggest that mnemonic instruction works best for beginning readers when it is combined with retrieval-based games, emotional safety, and an early link from letter names to syllables. In practice, first-grade teachers can use mnemonic sequences as an engaging entry point to letter learning, provided that they follow them with differentiated small-group support, explicit letter-writing practice, and encouragement that builds students' sense of competence rather than dependence on rewards. Future research should include a pre-test, more meetings in each cycle, finer-grained letter-by-letter assessment, a comparison class, and delayed measures of retention.

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