



IMPROVING STUDENTS' VOCABULARY MASTERY BY USING MEMRISE APP AT TENTH GRADE OF SMAN 1 LEWOLEMA

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Diterima: 17/9/2026; Direvisi: 1/10/2026; Diterbitkan: 8/10/2026

ABSTRACT

This study aimed to improve vocabulary mastery among tenth-grade students at SMAN 1 Lewolema through the pedagogical integration of the *Memrise* application. In the preliminary baseline, students encountered persistent difficulties in retaining target words and grasping word classes, with only 17.65% achieving the institutional passing standard. To resolve this instructional problem, a *Classroom Action Research (CAR)* design following the Kemmis and McTaggart framework was implemented across two iterative cycles following a diagnostic *pre-cycle*. The participants comprised 17 tenth-grade students engaged in vocabulary instruction covering nouns, verbs, and adjectives. Data were collected using 30-item objective vocabulary tests, structured classroom observation checklists, and reflective field notes. The empirical findings demonstrated continuous academic improvement across the intervention stages, where the classical mastery percentage increased from 17.65% (3 students) in the *pre-cycle* to 52.94% (9 students) in Cycle I, and reached 88.24% (15 students) in Cycle II, with the class mean score rising from 61.18 to 80.88. Concurrently, structured observational data documented an increase in active student learning engagement from 35.29% at baseline to 82.35% in Cycle II. Within the contextual boundaries of this single-group action research, the combination of *Memrise* multimedia drills, spaced repetition routines, and collaborative teacher scaffolding fostered meaningful improvements in students' vocabulary achievement.

Keywords: *vocabulary mastery, Memrise application, classroom action research.*

ABSTRAK

Penelitian ini bertujuan untuk meningkatkan penguasaan kosakata siswa kelas sepuluh di SMAN 1 Lewolema melalui pemanfaatan aplikasi *Memrise*. Pada tahap awal diagnostik, siswa mengalami kendala berulang dalam mengingat kosakata target dan membedakan kelas kata, di mana hanya 17,65% siswa yang mencapai kriteria ketuntasan minimal. Guna mengatasi hambatan instruksional tersebut, rancangan Penelitian Tindakan Kelas (*Classroom Action Research*) yang mengadaptasi model Kemmis dan McTaggart diterapkan dalam dua siklus tindakan setelah tahap pra-siklus. Subjek penelitian terdiri atas 17 siswa kelas sepuluh yang mengikuti pembelajaran kosakata meliputi nomina, verba, dan adjektiva. Data dihimpun menggunakan tes penguasaan kosakata 30 butir soal objektif, lembar observasi terstruktur, dan catatan lapangan reflektif. Temuan penelitian menunjukkan peningkatan belajar yang berkelanjutan antartahap tindakan, di mana persentase ketuntasan klasikal meningkat dari 17,65% (3 siswa) pada pra-siklus menjadi 52,94% (9 siswa) pada Siklus I, dan mencapai 88,24% (15 siswa) pada Siklus II, disertai kenaikan nilai rata-rata kelas dari 61,18 menjadi 80,88. Bersamaan dengan itu, data observasi mencatat peningkatan keaktifan belajar siswa dari 35,29% pada tahap awal menjadi 82,35% pada Siklus II. Dalam lingkup kontekstual penelitian tindakan satu kelas ini, perpaduan latihan multimedia *Memrise*, pengulangan berkala (*spaced*



repetition), dan bimbingan guru yang kolaboratif mampu meningkatkan pencapaian kosakata siswa secara nyata.

Kata kunci: *penguasaan kosakata, aplikasi Memrise, penelitian tindakan kelas.*

INTRODUCTION

In English language teaching, vocabulary mastery represents a vital lexical foundation that underpins all receptive and productive language competencies. Learners require an adequate lexical repertoire to interpret reading texts, comprehend spoken instructions, and formulate coherent communicative utterances. When secondary school learners possess limited vocabulary, their capacity to process academic texts and engage in meaningful classroom interactions becomes severely restricted. Nazeer et al. (2023) emphasize that systematic strategy instruction and multimodal lexical exposure are essential prerequisites for sustaining vocabulary acquisition among foreign language learners. Consequently, instructional approaches in secondary classrooms must move beyond isolated word memorization toward contextualized, interactive learning experiences.

Despite its recognized importance, mastering English vocabulary remains a major pedagogical obstacle in remote secondary schools. Preliminary diagnostic observations and baseline assessments conducted at SMAN 1 Lewolema revealed that tenth-grade students experienced pronounced difficulties in retaining lexical items and determining word classes. Specifically, the preliminary diagnostic test yielded a low class average score of 61.18, with only 3 out of 17 students (17.65%) satisfying the school's Minimum Mastery Criterion (*Kriteria Ketuntasan Minimal / KKM*) benchmark of 75. Instructional routines were predominantly characterized by passive rote learning, bilingual dictionary translation, and written whiteboard drills, which failed to stimulate student interest. Under these traditional conditions, students frequently forgot recently taught lexical items within days and demonstrated passive learning behaviors during classroom activities.

The pedagogical difficulties observed at SMAN 1 Lewolema highlight the urgent necessity of integrating digital educational media to make lexical learning more engaging and durable. Mobile-assisted language learning applications provide interactive environments featuring audiovisual input, gamified quizzes, and automated feedback mechanisms that enhance student focus. The *Memrise* application incorporates spaced repetition algorithms, native-speaker video snippets, and contextualized word challenges that support long-term memory encoding (Nuralisah & Kareviati, 2020). By dividing lexical content into manageable units and reinforcing word recall through timed intervals, digital applications stimulate cognitive retention and decrease lexical lookup fatigue among developing learners (Abdullaeva et al., 2025).

Earlier empirical investigations have reported positive gains from employing the *Memrise* application across diverse educational environments. Rohim et al. (2022) observed that *Memrise* enhanced students' vocabulary test performance within an experimental secondary school cohort. Similarly, Hendrisa et al. (2024) documented that utilizing *Memrise* supported junior high school students in recognizing word meanings and spelling patterns. However, prior research has largely evaluated *Memrise* through quantitative experimental designs without tracing how classroom-based pedagogical modifications—such as collaborative group discussions and guided pronunciation modeling—interact with mobile learning software in rural school settings. The present classroom action research addresses this contextual gap by examining how *Memrise*, combined with systematic teacher scaffolding and collaborative peer



tasks, improves vocabulary retention across specific grammatical categories (nouns, verbs, and adjectives) among rural East Nusa Tenggara learners.

Therefore, this classroom action research was carried out to examine whether the structured integration of the *Memrise* application, supported by guided instructional strategies, could improve vocabulary mastery and active participation among tenth-grade students at SMAN 1 Lewolema. The study specifically investigated student progress across three core grammatical word classes: concrete nouns, action verbs, and descriptive adjectives. The resulting findings are expected to contribute practical instructional insights for English educators seeking viable mobile-assisted language learning models in resource-limited classroom settings.

RESEARCH METHOD

This investigation utilized a *Classroom Action Research (CAR)* methodology aimed at diagnosing and resolving immediate learning problems within a localized classroom setting. The research framework followed the four-stage spiral model designed by Kemmis and McTaggart, encompassing *planning*, *acting*, *observing*, and *reflecting*. The study began with an initial diagnostic *pre-cycle* baseline, followed by two successive instructional cycles designed to refine instructional execution iteratively. Each subsequent cycle was modified according to collaborative reflections on student achievement data and classroom behavioral observations from the preceding cycle.

The study was carried out at SMAN 1 Lewolema, located in East Flores Regency, East Nusa Tenggara, during the 2025/2026 academic year. The subjects were 17 tenth-grade students enrolled in a single intact class cohort (comprising 8 male and 9 female students). This specific class was selected because diagnostic evaluations demonstrated widespread lexical deficiencies, and the students had access to personal smartphones compatible with the offline and online features of *Memrise*. Working with an intact class cohort of 17 learners enabled the researcher to conduct close monitoring, individualized pedagogical guidance, and comprehensive observational tracking throughout the study.

The instructional procedure across Cycle I and Cycle II was conducted in three 90-minute pedagogical meetings and one evaluation session per cycle. In Cycle I, the *acting* phase focused on introducing the *Memrise* interface, practicing targeted nouns and verbs related to daily school activities, and completing individual in-app repetition exercises. In Cycle II, instructional activities were adapted based on Cycle I reflections by incorporating collaborative student dyads, timed vocabulary team challenges, teacher-guided contextual sentence construction, and structured pronunciation drills. During this second cycle, students completed digital flashcard modules collaboratively, recorded unfamiliar words in personal lexical notebooks, and practiced applying target words in written sentence frames.

Data were gathered using vocabulary achievement tests, structured classroom observation checklists, and reflective field notes. The vocabulary achievement tests consisted of 30 objective multiple-choice items with four options per test, comprising 10 items for nouns, 10 items for verbs, and 10 items for adjectives, evaluated against the school's passing standard ($KKM \geq 75$). Content validity was reviewed and approved by two senior secondary English teachers, while internal test reliability was calculated using the Kuder-Richardson formula ($KR-20$), yielding a high reliability index of $r = 0.82$. Concurrently, classroom learning behavior was recorded by a collaborative English teacher using a four-point Likert observation checklist



measuring four observable dimensions: attention to instruction, task persistence, collaborative peer interaction, and autonomous application usage.

Quantitative test results were analyzed using descriptive statistics to calculate individual student scores, classroom mean scores, score ranges, and classical mastery percentages. The formula used to calculate classical completeness was:

$$P = \frac{n}{N} \times 100\%$$

where P represents the percentage of classical mastery, n denotes the number of students meeting or exceeding the passing score of 75, and N represents the total student sample ($N = 17$). The intervention was deemed successful if at least 80% of the students achieved a score of ≥ 75 by the end of Cycle II, accompanied by documented growth in active classroom participation. Qualitative observation data and field notes were analyzed using interactive thematic condensation, data display, and verified conclusion drawing to contextualize affective shifts in student learning engagement.

RESULTS AND DISCUSSION

Results

The classroom action research was conducted through three sequential phases: the diagnostic *pre-cycle*, Cycle I, and Cycle II. Throughout each phase, quantitative learning gains from vocabulary achievement tests and qualitative metrics from observation checklists were recorded systematically to evaluate students' mastery across nouns, verbs, and adjectives.

1. Pre-Cycle

The *pre-cycle* diagnostic baseline was conducted to map students' initial vocabulary mastery prior to the introduction of the digital application. Instruction was conducted through conventional teacher-led lectures, textbook reading passages, and bilingual word list memorization. The collaborator's observation checklist indicated that only 6 out of 17 students (35.29%) engaged actively in classroom tasks, with the majority demonstrating passive learning behavior and reluctance to respond to vocabulary prompts. The diagnostic test confirmed that most students struggled to distinguish between parts of speech and failed to identify contextual word meanings. The baseline score distribution and the proportion of students satisfying the institutional mastery standard in the *pre-cycle* are detailed in Table 1.

Table 1. Students' Vocabulary Achievement in the Pre-Cycle

No	Category / Metric	Diagnostic Value
1	Total Number of Students (N)	17
2	Highest Score (X_{max})	78.00
3	Lowest Score (X_{min})	45.00
4	Class Mean Score ($\bar{X}$)	61.18
5	Students Achieving Mastery (≥ 75)	3
6	Students Below Mastery (< 75)	14
7	Classical Mastery Percentage (P)	17.65%

Table 1 indicates that only 3 out of 17 students (17.65%) achieved the passing grade of 75, while 14 students (82.35%) remained below the required threshold. The lowest score recorded among the participants was 45.00, and the overall classroom average was 61.18. Furthermore, the highest score achieved was 78.00, only marginally exceeding the passing standard. These baseline indicators confirmed that conventional teaching methods were



insufficient to foster adequate vocabulary retention, establishing the need for an interactive intervention.

2. Cycle I

Cycle I was implemented across three instructional meetings and one evaluation session utilizing the *Memrise* application to teach targeted nouns and verbs. Students interacted with visual flashcards, repeated native-speaker pronunciation models, and completed spaced-interval digital quizzes on their mobile devices. Observation records documented an increase in student engagement, with the active participation index rising to 58.82% (10 students). However, several students faced difficulties in managing their screen pace, tended to guess answers quickly during gamified drills, and struggled to apply newly acquired words in communicative sentence contexts. The quantitative results of the vocabulary achievement test administered at the end of Cycle I are presented in Table 2.

Table 2. Students' Vocabulary Achievement in Cycle I

No	Category / Metric	Cycle I Value
1	Total Number of Students (N)	17
2	Highest Score (X_{max})	85.00
3	Lowest Score (X_{min})	55.00
4	Class Mean Score ($\bar{X}$)	72.35
5	Students Achieving Mastery (≥ 75)	9
6	Students Below Mastery (< 75)	8
7	Classical Mastery Percentage (P)	52.94%

As shown in Table 2, the class average increased to 72.35, representing a gain of 11.17 points over the diagnostic baseline. The number of students achieving mastery rose from 3 to 9 learners, bringing the classical mastery percentage to 52.94%. In addition, the lowest score increased from 45.00 to 55.00, while the highest score reached 85.00. However, because the classical mastery rate of 52.94% remained below the pre-established success indicator of 80%, the study progressed to Cycle II with targeted instructional adjustments.

3. Cycle II

In Cycle II, the action plan was recalibrated based on reflective evaluations of Cycle I, incorporating descriptive adjectives alongside nouns and verbs. The teacher introduced collaborative peer-learning dyads, instituted personalized vocabulary reflection logs, and conducted structured contextual sentence-building drills following each digital module. Observation records showed marked improvements in learner autonomy, peer collaboration, and task persistence, elevating the active engagement index to 82.35% (14 students). Students exhibited greater care when answering in-app challenge questions and applied spaced repetition strategies purposefully. The summative evaluation results of students' vocabulary achievement in Cycle II are summarized in Table 3.

Table 3. Students' Vocabulary Achievement in Cycle II

No	Category / Metric	Cycle II Value
1	Total Number of Students (N)	17
2	Highest Score (X_{max})	92.00
3	Lowest Score (X_{min})	68.00
4	Class Mean Score ($\bar{X}$)	80.88
5	Students Achieving Mastery (≥ 75)	15
6	Students Below Mastery (< 75)	2



7	Classical Mastery Percentage (P)	88.24%
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The empirical data in Table 3 indicate that the classroom mean score advanced to 80.88 in the final evaluation. A total of 15 out of 17 students (88.24%) successfully met or exceeded the *KKM* benchmark of 75, with the highest score reaching 92.00. Only 2 students remained marginally below the mastery cutoff, scoring 68.00 and 70.00 respectively. Because the classical mastery percentage of 88.24% surpassed the predetermined 80% success criterion, the action research was formally concluded at the end of Cycle II. To provide a clear comparative synthesis of student achievement across all research phases, the cumulative data are compiled in Table 4.

Table 4. Comparison of Students' Vocabulary Mastery Across Stages

Research Stage	Class Mean (X ⁻)	Score (X _{min} –X _{max})	Range Students Achieving KKM	Classical Mastery (P)
<i>Pre-Cycle</i>	61.18	45.00 – 78.00	3	17.65%
Cycle I	72.35	55.00 – 85.00	9	52.94%
Cycle II	80.88	68.00 – 92.00	15	88.24%

Table 4 illustrates the steady progression across the three phases of the investigation. The classical mastery proportion rose by 35.29 percentage points from the *pre-cycle* to Cycle I, and gained an additional 35.30 percentage points in Cycle II, culminating in 88.24%. Over the same period, the class mean score rose by 19.70 points, advancing from 61.18 to 80.88. Concurrently, the lowest recorded score increased by 23.00 points across the intervention. These complementary indicators show that the cyclical intervention supported student progress across the targeted lexical items.

Discussion

The empirical findings across two instructional cycles indicate clear improvements in vocabulary mastery and active classroom engagement among tenth-grade students at SMAN 1 Lewolema. The proportion of students achieving the institutional *KKM* passing standard improved from 17.65% at baseline to 52.94% in Cycle I, and reached 88.24% in Cycle II. The classroom mean score rose from 61.18 to 80.88, while the observed student engagement index advanced from 35.29% to 82.35%. These positive shifts suggest that integrating multimedia mobile learning with structured classroom routines helped students process and retain unfamiliar English words more effectively. Furthermore, the integration of interactive digital content allows students to associate vocabulary with visual cues and contextual sentences, which significantly enhances long-term retention and recognition (Ausi et al., 2025; Harutyunyan & Mkrtchyan, 2025; Jedi-Sari-Biglar & Kaban, 2023; Ramadhan et al., 2025; Zega et al., 2025).

The observed learning gains align with previous research examining digital vocabulary applications. Tabassum and Naveed (2024) observed that combining audiovisual stimuli with systematic lexical rehearsal substantially enhances word retention among English as a foreign language (*EFL*) learners. Furthermore, Nuralisah and Kareviati (2020) confirmed that *Memrise* provides motivating lexical drills through immediate feedback and native-speaker pronunciation models. In the present study, the app's spaced repetition algorithm was particularly beneficial in reinforcing correct spelling and part-of-speech identification, reducing the rapid lexical forgetting observed during the baseline phase. Moreover, the explicit focus on vocabulary through these digital platforms mirrors findings that mobile-assisted interventions facilitate superior lexical acquisition compared to traditional methods by improving both



pronunciation accuracy and contextual sentence construction (Boroughani et al., 2023; Jedi-Sari-Biglar & Kaban, 2023; Ji & Aziz, 2021; Manooy & Bauyot, 2025; Nasrifah et al., 2025).

Importantly, these instructional gains should not be attributed solely to the software. The pedagogical refinements introduced in Cycle II—including collaborative peer pairing, teacher-led sentence framing, and personalized vocabulary logs—played an essential role in helping students apply digital exercises to meaningful communication. Setiawan and Wiedarti (2020) emphasize that digital learning media yield optimal outcomes when embedded within supportive, communicative classroom routines rather than used in isolation. In Cycle II, pairing students allowed them to cross-check lexical meanings and explain correct grammatical usages to their peers, preventing unreflective guessing during gamified tasks. Consequently, the observed progress reflects a joint contribution of mobile software features and systematic teacher scaffolding. This synergistic approach underscores the necessity of balancing high-frequency digital exposure with structured opportunities for collaborative production (Al-majd & Belton, 2024; Benabbes et al., 2025; Buddha et al., 2024; Li & Wilson, 2025; Sahrir et al., 2026).

CONCLUSION

This classroom action research demonstrated meaningful improvements in vocabulary mastery and active classroom participation among tenth-grade students at SMAN 1 Lewolema following the pedagogical integration of the *Memrise* application. The proportion of students achieving the institutional passing standard ($KKM \geq 75$) increased from 17.65% (3 students) in the diagnostic *pre-cycle* to 52.94% (9 students) in Cycle I, and reached 88.24% (15 out of 17 students) in Cycle II, thereby surpassing the pre-established 80% success indicator. The class average score improved from 61.18 to 80.88, accompanied by an increase in active classroom participation from 35.29% to 82.35%. The application, combined with teacher-guided collaborative scaffolding, provided useful practice in helping students understand and retain target nouns, verbs, and adjectives.

However, several methodological boundaries must be acknowledged when interpreting these results. Because this study was conducted as a classroom action research project within a single class cohort of 17 students without a separate control group, the findings cannot be generalized to broader secondary school populations. Furthermore, the intervention evaluated vocabulary learning over two instructional cycles, meaning long-term lexical retention was not tracked over an extended period. Future researchers are encouraged to implement quasi-experimental designs with larger sample sizes and explore how mobile-assisted language learning applications can be combined with diverse communicative and task-based teaching approaches.

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