



The Effect of Syllable Card Learning Media on The Early Reading Ability of Grade I Students

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ABSTRACT

This study aims to determine the effect of syllable card learning media on the early reading ability of Grade I students at SD Inpres 16, Sorong Regency. A quantitative pre-experimental approach was employed using a one-group pretest-posttest design, involving 38 Grade I students selected through a saturated sampling technique. Data were collected using a structured observation sheet and a reading performance test encompassing five assessed aspects: pronunciation of letters, syllables, words, word combinations, and sentence reading fluency. Instrument reliability, assessed using Cronbach's alpha, yielded coefficients of 0.856 (pretest) and 0.882 (posttest), both indicating high reliability. The Shapiro-Wilk normality test confirmed that both pretest (statistic = 0.976, sig. = 0.580) and posttest (statistic = 0.951, sig. = 0.099) data were normally distributed. The paired-samples t-test yielded a calculated t-value of 14.945, which substantially exceeds the critical t-value of 2.026 (df = 37, sig. (2-tailed) < 0.001). These results confirm that syllable card learning media has a statistically significant positive effect on the early reading ability of Grade I students, evidenced by markedly improved performance and increased enthusiasm for reading instruction following the intervention.

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INTRODUCTION

Indonesian language acquisition represents a protracted developmental journey through which every student must progress in learning their second language following their mother tongue. Proficiency in the Indonesian language requires students to communicate accurately and appropriately, both orally and in writing, while concurrently developing critical and creative thinking capacities. Students acquire reading competence through processes of inquiry, response, argumentation, and dialogic engagement with others (Fitriyani, 2017). However, field observations conducted at the research site reveal that students' reading ability remains persistently low, a pattern consistent with broader challenges documented across many Indonesian elementary schools.

Students in the lower elementary grades are typically situated within the early childhood developmental range, spanning approximately 7 to 9 years of age, a period of development that is highly malleable and susceptible to environmental and instructional influence. During this critical window, all of a child's latent potential requires careful attention and deliberate stimulation in order to develop optimally. Elementary-age children are situated within Piaget's concrete operational stage of cognitive development, during which learning is most effectively scaffolded through tangible, observable, and manipulable instructional materials rather than abstract verbal instruction alone. Rusli et al. (2025) emphasize that understanding the cognitive processing and neurodevelopmental characteristics of elementary-age learners is essential for designing instruction that accurately anticipates and addresses common misconceptions, underscoring the necessity of developmentally appropriate, concrete instructional approaches during this formative period.

Instructional media constitute an essential element within the teaching and learning process. Media represent a highly effective means of alleviating

student disengagement, as media-supported instruction is widely regarded as effective in sustaining and energizing student enthusiasm throughout the learning process. Accordingly, instructional media play a critically important role in facilitating effective teaching and learning.

The term "media" derives from the Latin word "medium," literally meaning intermediary or conduit; media may thus be understood as an intermediary or conduit that transmits messages from sender to receiver (Purnawati, 2016). According to Supartini (2017), instructional media may be characterized as follows: (1) instructional media serve as a vehicle through which the message source (teacher) conveys information to the message recipient (student); (2) the message conveyed constitutes instructional content; and (3) the objective to be achieved is the occurrence of learning within the student. Muhson (2017) similarly observes that, in general terms, media encompass any tool capable of conveying information from a source to a recipient. Instructional media may therefore be understood as software comprising educational messages or information, presented through the use of supporting hardware tools, so that such information can be successfully conveyed to students. Accordingly, (a) media function as a vehicle through which a message source conveys content to its intended recipient, and (b) the content conveyed constitutes instructional material, with the ultimate objective being the realization of an effective learning process.

Based on observations and interviews conducted between the researcher and the Grade I class teacher at SD Inpres 16, Sorong Regency, several specific challenges were identified. Students continued to experience considerable difficulty in reading, struggled to blend individual words into coherent phrases, and exhibited persistent difficulty in spelling words, such that fluent reading had not yet been achieved. The prevailing instructional approach relied predominantly on lecture-based methods and note-copying from the whiteboard, with students seated passively in a classical instructional format during reading lessons. This limited use of instructional media during the learning process was identified as a contributing factor underlying students'

persistently low reading ability. This pattern of passive, teacher-centered instruction is consistent with concerns raised by Pada et al. (2025), who argue that dialogic, student-centered pedagogical approaches, in contrast to transmission-based instruction, are essential for empowering young learners as active participants in their own learning.

In response to these challenges, this study sought to identify a viable instructional solution through the application of syllable card media to improve students' early reading ability. Syllable card media constitutes instructional material containing written syllables designed to support students in learning to read. Syllable cards are typically constructed from cardstock inscribed with syllables in a variety of distinct colors. According to Wiadi (2021), syllable cards are developed using paper cutouts inscribed with syllables presented in visually engaging colors, designed to capture students' interest and motivate active participation in card-based learning activities. This game-like, manipulative quality of card-based media closely parallels the pedagogical logic underlying team-based card and game instructional formats such as the Team Games Tournament (TGT) cooperative learning model documented by Huda et al. (2024), who demonstrate that structured, game-based card activities are highly effective in sustaining young learners' engagement and improving academic achievement in primary school mathematics instruction, a finding with clear pedagogical resonance for card-based literacy instruction.

Colorful syllable cards represent media that can be productively employed in early reading instruction and are particularly well-suited to the present study's instructional context, as the use of syllable cards engages three distinct learning modalities. The first is the visual learning modality: colorful syllable cards are well-suited to students with visual learning preferences, as the varied colors featured on the cards capture and sustain visual attention. The second is the auditory learning modality: when learning with syllable cards, students also listen to each syllable or word pronounced, whether by the teacher, themselves, or their peers. The third is the kinesthetic learning modality: the activity of arranging and manipulating syllable cards involves coordinated hand and eye

movement, rendering it well-suited to students with kinesthetic learning preferences. This integration of visual, auditory, and kinesthetic stimulation is consistent with Mayer's (2017) principles of multimedia learning, which demonstrate that instructional materials engaging multiple sensory channels simultaneously, when designed to avoid cognitive overload, enhance encoding, retention, and transfer of learned material.

Syllable cards constitute a medium well-suited to supporting students in improving their early reading ability. This proposition is supported by Pahlavi (2021), who similarly affirms that manipulative card- and puzzle-based media are effective instructional tools for early reading and writing instruction. Internationally, Ehri (2020) and Castles et al. (2018) provide robust theoretical and empirical grounding for this approach, demonstrating that systematic, structured practice with grapheme-phoneme correspondences, precisely the skill targeted by syllable card activities, constitutes the most evidence-based pathway toward reading acquisition. Lonigan and Milburn (2017) further confirm that phonological awareness and letter knowledge, both directly cultivated through syllable card practice, are the strongest predictors of subsequent literacy development among young learners. This study therefore aims to determine the effect of syllable card learning media on the early reading ability of Grade I students at SD Inpres 16, Sorong Regency.

METHODS

This study employed a quantitative approach with a pre-experimental design. Quantitative research is characterized as research involving a single research variable. The method applied was a pre-experimental design, conducted with a single group, the experimental group, which received instruction using syllable card media. The research design adopted was a one-group pretest and posttest design, in which testing was conducted twice: once prior to and once following the intervention. The study was conducted at SD Inpres 16, Sorong Regency, with observation and performance testing (pretest and posttest) employed as the primary data collection techniques.

Table 1. One-Group Pretest and Posttest Research Design

| Pretest | Treatment | Posttest |
|----------------|-----------|----------------|
| O ₁ | X | O ₂ |

Notes: O₁ = Pretest (initial assessment prior to treatment); X = Treatment (instruction using syllable card media); O₂ = Posttest (final assessment following treatment)

This study was conducted during the odd semester of the 2024/2025 academic year, from August 20 to September 3, 2024, at SD Inpres 16, Sorong Regency, across six instructional sessions.

Population and Sample

The research population comprised Grade I students at SD Inpres 16, Sorong Regency. To determine the research sample, a saturated sampling technique was employed. According to Sugiyono (2018), saturated sampling is a technique applied when all members of the population are included as the research sample for a specific purpose. Accordingly, the sample used in this study comprised all Grade I students at SD Inpres 16, Sorong Regency, totaling 38 students.

Data Collection Technique

Data collection constitutes the most strategically critical step in research, as the primary objective of any study is to obtain data for further analysis. The data collection techniques employed in this study comprised observation and performance testing (pretest-posttest). In general terms, observation is a data collection method conducted through systematic observation and monitoring of research subjects' behavior in relation to the phenomenon under investigation (Mania, 2018). Performance testing requires students to utilize objects or assemble components as directed by the test. The performance test formats employed in this study comprised a letter reading test, a syllable reading test, a word reading test, and a sentence reading test. The complete test instrument is presented in the Appendix.

Table 2. Reading Ability Assessment Blueprint

| No. | Aspect Assessed | Indicator | Cognitive Level | Number of Items |
|-----|-----------------|-----------------------|-----------------|-----------------|
| 1 | Pronunciation | Pronouncing letters | C1 | 26 letters |
| 2 | Pronunciation | Pronouncing syllables | C1 | 10 syllables |

| | | | | |
|---|-----------------|-------------------------------|----|---------------------|
| 3 | Pronunciation | Pronouncing words | C1 | 10 words |
| 4 | Pronunciation | Pronouncing combinations word | C1 | 4-word combinations |
| 5 | Reading Fluency | Pronouncing a sentence | C1 | 1 sentence |

Table 3. Reading Ability Assessment Criteria

| Aspect | Performance Description | Rating Category |
|--------------------------------|---|-----------------|
| Letter Pronunciation | The student pronounces letters correctly and clearly | Very Good |
| | The student pronounces letters correctly but with limited fluency | Good |
| | A student pronounces letters with unclear articulation | Adequate |
| | A student pronounces letters unintelligibly | Need Guidance |
| Syllable Pronunciation | The student pronounces syllables correctly and clearly | Very Good |
| | The student pronounces syllables correctly but with limited fluency | Good |
| | A student pronounces syllables with unclear articulation | Adequate |
| | The student pronounces syllables unintelligibly | Need Guidance |
| Word Pronunciation | The student pronounces words correctly and clearly | Very Good |
| | A student pronounces words correctly but with limited fluency | Good |
| | A student pronounces words with unclear articulation | Adequate |
| | The student pronounces words unintelligibly | Need Guidance |
| Word Combination Pronunciation | The student pronounces word combinations correctly and clearly | Very Good |
| | The student pronounces word combinations correctly but with limited fluency | Good |
| | A student pronounces word combinations with unclear articulation | Adequate |
| | A student pronounces word combinations unintelligibly | Need Guidance |
| Sentence Reading | The student reads the sentence fluently | Very Good |

Fluency

| | |
|--|---------------|
| Student reads fluently with minimal teacher assistance | Good |
| A student reads without teacher assistance but cannot complete the passage | Adequate |
| A student struggles to read the sentence even with teacher assistance | Need Guidance |

Data Analysis Technique

Data analysis in this study comprised reliability testing, normality testing, and hypothesis testing. Normality testing aims to detect the distribution of data for the variables employed in the study. Data that are suitable for testing the proposed research model must be normally distributed. The normality test serves to determine whether the variable data employed in the study are normally distributed, thereby permitting the research to proceed to subsequent analytical stages. The Shapiro-Wilk test was employed for normality testing, conducted using Statistical Product and Service Solution (SPSS) 30.0 for Windows. Subsequently, a t-test was conducted to evaluate whether the research hypothesis was supported by the obtained data. The resulting data were analyzed to determine the presence or absence of an effect of syllable card media on early reading ability. This study employed the paired-samples t-test using SPSS 30.0 for Windows. The hypotheses tested were as follows:

H₁: There is an effect of syllable card media use on the early reading ability of Grade 1 students at SD Inpres 16, Sorong Regency.

H₀: There is no effect of syllable card media use on the early reading ability of Grade 1 students at SD Inpres 16, Sorong Regency.

RESULTS AND DISCUSSION

This study was conducted to determine the effect of syllable card media on the early reading ability of students, with the intervention applied to the entire Grade 1 sample comprising 38 students. The study was conducted at SD Inpres 16, Sorong Regency, over a two-week period from August 20 to September 3, 2024, encompassing six instructional sessions. The class selected as the research sample was Grade 1. This research was conducted with the objective of determining whether an effect of syllable card media use existed on students'

early reading ability. The study employed a pre-experimental design, conducted with a single group, the experimental group, which received instruction using syllable card media.

Data Analysis Results

The findings of this study comprise quantitative data. The data employed in this research consist of performance test results used to determine the degree of acceptance of the instructional model provided by the teacher. The research findings are presented in narrative and tabular form, described in detail below.

Reliability Testing

In this study, reliability testing was conducted on the test instrument. The reliability test results for the pretest instrument are presented in Table 4.

Table 4. Pretest Reliability Statistics

| Cronbach's Alpha | Number of Items |
|------------------|-----------------|
| 0.856 | 5 |

The pretest reliability analysis yielded a Cronbach's alpha coefficient of 0.856 across the five assessed reading aspects (letter pronunciation, syllable pronunciation, word pronunciation, word combination pronunciation, and sentence reading fluency). This value indicates high reliability and confirms that the pretest instrument is suitable for use in this study.

Table 5. Posttest Reliability Statistics

| Cronbach's Alpha | Number of Items |
|------------------|-----------------|
| 0.882 | 5 |

The posttest reliability analysis yielded a Cronbach's alpha coefficient of 0.882. This value indicates high reliability and confirms that the posttest instrument is suitable for use as a data collection tool in this study.

Normality Testing

Normality testing was conducted using the Shapiro-Wilk formula with a significance level of 0.05. This test was applied to students' pretest and posttest scores, with the criterion that a resulting value greater than 0.05 indicates a normal data distribution. The normality test results are presented in Table 6.

Table 6. Normality Test Results (Pretest and Posttest)

| Variable | K-S Statistic | K-S df | K-S Sig. | S-W Statistic | S-W df | S-W Sig. |
|----------|------------------|-----------|-------------|------------------|-----------|----------|
| Pretest | 0.121 | 38 | 0.173 | 0.976 | 38 | 0.580 |
| Posttest | 0.096 | 38 | 0.200 | 0.951 | 38 | 0.099 |

Based on the normality test results presented in Table 6, the Shapiro-Wilk statistic for the pretest was 0.976 with a significance value of 0.580, indicating that the pretest data are normally distributed. The Shapiro-Wilk statistic for the posttest was 0.951 with a significance value of 0.099, likewise indicating a normal data distribution. As both significance values exceed the threshold of $\alpha = 0.05$, it can be concluded that the pretest and posttest data for each variable are normally distributed and are therefore appropriate for use in subsequent hypothesis testing.

Hypothesis Testing

Hypothesis testing results are presented in Table 7.

Table 7. Paired-Samples t-Test Results

| Pair | Mean Difference | Standard Deviation | Std. Error Mean | 95% CI Lower | 95% CI Upper | t | df | Sig. (2-tailed) |
|--------------------------------|--------------------|-----------------------|-----------------------|-----------------|-----------------|-------------|----|--------------------|
| Pair 1 Pretest-P osttest | -17.368 | 7.164 | 1.162 | -19.723 | -15.01 4 | -14.94 5 | 37 | < 0.001 |

Decision Based on Sig. (2-Tailed)

Based on Table 7, the significance value (2-tailed) is < 0.001 , which is less than the significance threshold of $\alpha = 0.05$. Accordingly, it can be concluded that syllable card media has a significant effect on the early reading ability of Grade 1 students.

Decision Based on t-Test Comparison

Based on the paired-samples t-test results presented in Table 7, the calculated t-value ($t^{\text{calculated}}$) was 14.945. The subsequent step involved determining the critical t-value ($t_{\alpha/2}$) based on the degrees of freedom (df) and the significance level ($\alpha/2$). Based on the data above, $df = n - 1 = 38 - 1 = 37$, and $\alpha/2 = 0.05/2 = 0.025$. These values served as the basis for determining the critical t-value, yielding $t_{\alpha/2} = 2.026$. Since $t^{\text{calculated}} (14.945) > t_{\alpha/2} (2.026)$, H_1 is accepted and H_0 is rejected. It can therefore be concluded that syllable card media has a significant effect on the early reading ability of Grade 1 students.

Discussion

The findings of this study demonstrate that syllable card media exerts a statistically significant positive effect on the early reading ability of Grade I students at SD Inpres 16, Sorong Regency. The large mean difference between pretest and posttest scores (-17.368), together with the substantial gap between the calculated t-value (14.945) and the critical t-value (2.026), provides robust evidence of a meaningful instructional effect. These findings are consistent with Pahlavi (2021), who similarly documents the effectiveness of manipulative card-based media in improving early reading and writing ability among Grade 1 students, and with Nurazizah and Yulianti (2021), who confirm that syllable card media produces significant improvements in early reading ability among first-grade elementary students.

These results can be substantively explained through reference to the broader phonics and reading acquisition literature. Ehri (2020) and Castles et al. (2018) establish that systematic, structured practice with grapheme-phoneme correspondences is the most empirically validated pathway to reading

acquisition; syllable card activities directly operationalize this principle by requiring repeated, scaffolded practice in decoding individual letters, syllables, words, and word combinations. Lonigan and Milburn (2017) further confirm that phonological awareness and letter knowledge, both directly targeted through syllable card practice, are the strongest predictors of subsequent literacy achievement, providing a robust theoretical foundation for the observed improvement in this study.

The multisensory character of syllable card media also appears central to its effectiveness. By simultaneously engaging visual (colorful card design), auditory (spoken pronunciation), and kinesthetic (physical card manipulation) learning channels, the intervention aligns with Mayer's (2017) multimedia learning principles, which demonstrate that well-designed multimodal instructional materials enhance encoding and retention more effectively than single-channel instruction. This is further corroborated by Walgermo et al. (2018), who establish that positive, engaging early literacy experiences are critical in shaping students' reader self-concept at the very onset of formal reading instruction, a period precisely corresponding to the Grade 1 sample examined in this study.

The game-like, manipulative quality of syllable cards additionally appears to have contributed to heightened student engagement throughout the intervention, an interpretation supported by Huda et al. (2024), who document that structured, card-based cooperative game formats such as Team Games Tournament (TGT) are highly effective in sustaining young learners' motivation and improving academic outcomes in primary mathematics instruction. The parallel suggests that the pedagogical value of game-based, manipulative card media extends productively across content domains, from numeracy to early literacy. More broadly, Rusli and Yasmin (2024) affirm that hands-on, exploratory instructional approaches, integrated with character education principles, are effective in developing foundational process skills among elementary students, reinforcing the broader pedagogical premise that concrete, multisensory, and student-active instructional media are particularly

well-suited to learners at the concrete operational stage of cognitive development.

Finally, the marked contrast between the largely passive, lecture-based instructional approach observed prior to the intervention and the active, enthusiastic student engagement documented during syllable card instruction is consistent with Pada et al.'s (2025) broader argument that dialogic, student-centered pedagogical approaches are essential for empowering young learners as active participants in their own learning process, in contrast to the limitations of purely transmission-based instruction. Taken together, these converging theoretical and empirical perspectives provide strong support for the conclusion that syllable card media constitutes an effective, developmentally appropriate, and evidence-aligned instructional approach for improving early reading ability among Grade 1 elementary school students.

CONCLUSION

Based on the research questions and hypotheses proposed, the results of data analysis, and hypothesis testing, it can be concluded that the use of syllable card media is proven sufficiently effective and has a significant effect on the early reading ability of Grade 1 students at SD Inpres 16, Sorong Regency. The calculation results yielded $t^{\text{calculated}} > t^{\text{table}}$, namely $14.945 > 2.026$, and it can be concluded that H_1 is accepted and H_0 is rejected. Accordingly, the use of syllable card media has a significant effect on the early reading ability of students at SD Inpres 16, Sorong Regency, as further evidenced by students' observable enjoyment and enthusiasm when learning to read using syllable card media.

Teachers are encouraged to integrate syllable card media and other manipulative, multisensory instructional tools into early reading instruction at the elementary level, particularly for foundational phonics-based skill development. Schools are advised to invest in the development of varied, engaging instructional media to support early literacy programs. Future research is recommended to employ experimental designs incorporating control

groups, larger and more diverse samples across multiple schools, and longitudinal follow-up assessment to more rigorously establish the sustained effects of syllable card media on early reading ability and broader literacy outcomes.

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Declarations

| | | |
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| Author Contribution | : | S. R. T. Pakaya: Conceptualization, Data Collection, Formal Analysis, Writing - Original Draft; D. Rahayu: Supervision, Validation, Writing - Review & Editing; A. A. Fitriani: Methodology, Supervision, and Writing - Review & Editing. |
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