



Development of “Cakram Kata” (Word Disc) Learning Media to Improve Early Reading Skills at SDN Pacet 2 Mojokerto

Rochmawati^{1*} Adi Bandono^{2*} Susilowati^{3*}

¹²³Universitas PGRI Adi Buana Surabaya, Indonesia

¹rochmawati.moelya@gmail.com, ²adibandono@unipasby.ac.id, ³susilowati@unipasby.ac.id

Article History:

Received:

12-08-2026

Revised:

22-08-2026

Accepted:

25-09-2026

Keywords:

Cakram Kata; manipulative media; early reading; Phase A; ADDIE; Research and Development

Correspondence Address:

rochmawati.moelya@gmail.com

Abstract:

Mastering early reading is a crucial foundation for Phase A students. Initial mapping at SDN Pacet 2 Mojokerto showed that many of the 13 first-grade students experienced difficulties identifying letters, spelling syllables, and constructing functional words. The study aimed to develop “Cakram Kata” as a non-digital manipulative learning medium for early reading through a multisensory approach. Research and Development (R&D) was conducted using the ADDIE model: analysis, design, development, implementation, and evaluation. Product feasibility was examined through expert validation of instructional design, content, and learning media, while practicality was examined through teacher and student responses. Early reading performance was described using pretest and posttest scores. The product obtained an overall expert-validation score of 90.9%, categorized in the thesis as “Highly Valid.” Teacher response reached 90% and student response reached 98%, both categorized as “Highly Practical.” The class mean increased from 66.15 in the pretest to 86.32 in the posttest, while classical mastery increased from 46.15% (6 students) to 84.61% (11 students). The findings indicate that the developed medium was feasible and practical for early reading instruction and was interpreted in the thesis as effective in supporting Phase A students’ reading development.

This is an open-access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Introduction (مقدمة)

Early elementary education provides an important foundation for literacy development. In the Merdeka Curriculum, early reading is a central learning focus for Phase A, particularly Grade

1. Early reading is not limited to mechanically pronouncing letters; it supports children in interpreting written messages and accessing learning content in subsequent grades.

Initial conditions at SDN Pacet 2 Mojokerto indicated that several Grade 1 students had difficulty identifying visually similar letters, associating symbols with sounds, combining syllables, and constructing meaningful words. The learning process was still strongly supported by conventional text-based activities, while concrete and interactive learning media were limited. These conditions are relevant to the developmental characteristics of children aged approximately 6–7 years, who benefit from concrete objects that can be touched, moved, and explored.

The study therefore developed “Cakram Kata,” a circular, manually operated manipulative medium designed to connect visual letter symbols with syllables and meaningful words. The product uses layered discs, contrasting colors, and a slot window that limits the visual field to one word combination at a time. The product was designed as a low-cost, portable, non-digital medium using recycled plastic materials and was intended to support multisensory learning.

Previous studies cited in the thesis reported positive contributions of manipulative, visual-kinesthetic, and game-based media to early literacy. Govorova, Benítez, and Cuesta (2023) and Djou et al. (2022) reported benefits of simple game-based and visual-kinesthetic media for early reading development. These findings provided the conceptual basis for developing a concrete medium suited to the needs identified at the research site.

This study aimed to describe the development of Cakram Kata using the ADDIE model, determine its feasibility based on expert validation, examine its practicality from teacher and student responses, and describe the profile of early reading achievement before and after classroom implementation.

Theoretical foundation for early reading

The thesis positions early reading as a foundational competence involving letter recognition, phonological awareness, syllable combination, word formation, and simple meaning construction. Adams (1990) emphasizes phonological awareness as a key basis of literacy development, while Anthony and Francis (2005) describe sensitivity to and manipulation of speech sounds as closely related to early reading development. Ehri (2022) is used in the thesis to explain the development of connections between graphemes and phonemes during the early stages of word reading. Stanovich (1986) is also used to frame early literacy development as consequential for later reading progress.

The learning characteristics of Grade 1 students also support the use of concrete media. The thesis draws on Piaget’s concrete-operational perspective and Santrock’s (2021) account of child development to explain why children in this age range can benefit from objects that can be seen, touched, moved, and manipulated. The Cakram Kata medium was therefore designed not merely as a visual aid, but as a physical object through which students can coordinate visual recognition with hand movement while constructing syllables and words.

Media learning and the rationale for manipulation

The thesis describes learning media as a means of communicating instructional messages and facilitating interaction between learners, teachers, and content (Fatirul, 2022; Fatria, 2023; Indrawati, 2021). Degeng (2021) places media within the instructional system as an external stimulus, while Sabariah et al. (2025) highlights the broader role of learning media in supporting instructional quality. Indrawati (2021), Fatria (2023), and Yaniawati et al. (2022) distinguish low-technology, projected, audiovisual, and digital media. Within this classification, Cakram Kata belongs to low-technology manipulative media because it can be operated manually without electricity or a digital device.

The thesis further associates manipulative media with multisensory learning because learners can see, touch, rotate, compare, and rearrange the components of the medium. Rufii (2023) is used to support the relevance of multisensory media in elementary education. Munir (2017) and Yaniawati et al. (2022) provide the broader digital-media context, although the present product remains deliberately non-digital. In the present product, the physical rotation of layered discs is linked directly to the instructional task: students change the visual combination in the viewing window and then attempt to read the resulting syllable or word.

Related research and the research gap

The thesis reviews several studies of concrete and manipulative literacy media. Sari and Rahman (2021) developed a rotating-card medium for Grade 1 early reading; Harpiani (2021) examined letter-card media; Sani, Widjojoko, and Wardana (2022) used word cards; Kurnia (2022) developed letter cards; Rosmidar, Adawiyah, and Irawati (2024) examined picture-word cards for young children; and Meo Soro and Awe (2025) used picture-word cards in Grade 1. These studies are presented in the thesis as evidence that concrete, manipulable media can support active participation in early literacy learning.

The review also identifies work more directly related to rotating or wheel-based media. Govorova, Benítez, and Cuesta (2023) investigated simple manipulative games; Pratiwi and Suryana (2023) developed a Cakram Kata medium; and Wijayanti, Suryanti, and Suprihatin (2024) developed a Word Wheel for Phase A literacy. Djou et al. (2022) is cited for visual-kinesthetic media and early reading. Together, these studies provide the empirical context for the present development. The contribution claimed by the thesis is the design of a low-cost, non-digital layered disc using locally available recycled materials, combined with a viewing window that focuses the child’s attention on the current letter or word combination.

Instructional development framework

The product-development process follows ADDIE. Branch (2009) provides the core ADDIE framework, while Dick, Carey, and Carey (2015), Suparman (2021), and Wahono (2023) are used in the thesis to emphasize systematic design, formative evaluation, prototyping, and iterative revision. Degeng (2021) and Fatirul (2022) provide additional instructional-system and media perspectives. Thus, the present study treats the product as an instructional system component that must be analyzed, designed, developed, implemented, and evaluated rather than as a stand-alone teaching aid.

Based on this theoretical and empirical background, the study focuses on four connected questions: how the Cakram Kata product is developed through ADDIE; how experts assess its validity; how teachers and students assess its practicality; and how the profile of early reading performance changes between the pretest and posttest in the field trial. The study is deliberately descriptive and contextual, so the learning-outcome data are interpreted as evidence from the participating class rather than as a basis for statistical generalization.



Method (منهج)

Research Design and Development Model

This study employed Research and Development (R&D) with the ADDIE model consisting of Analysis, Design, Development, Implementation, and Evaluation. The design focused on producing and evaluating Cakram Kata as a non-digital manipulative medium for Grade 1 (Phase A) students at SDN Pacet 2 Mojokerto. The study was descriptive-evaluative rather than inferential; therefore, the learning outcomes were summarized using descriptive quantitative indicators rather than hypothesis testing.

The Analysis phase identified instructional problems, curriculum requirements, and student characteristics. The Design phase specified the physical product, learning content, and research instruments. The Development phase produced the prototype, obtained expert judgments, and revised the product. The Implementation phase consisted of a small-group trial and a field trial. The Evaluation phase assessed validity, practicality, and the descriptive profile of learning outcomes.

Participants and Trial Design

The main users were 13 Grade 1 students at SDN Pacet 2 Mojokerto. A small-group trial involved 4 students, while the field trial involved all 13 students for two meetings. One Grade 1 teacher participated as a practitioner respondent. Three experts evaluated the product in the domains of instructional design, content, and learning media. The thesis reports purposive sampling based on the instructional needs identified at the research site.

Data included quantitative scores from expert validation, teacher and student response questionnaires, and early reading performance, together with qualitative comments, observations, interview information, and documentation.

Instruments and Data Collection

The instruments comprised expert-validation sheets using a 1–5 Likert scale, teacher and student response questionnaires, an early reading performance test, observation sheets, semi-structured interviews, and documentation. The performance assessment consisted of 18 reading tasks covering isolated-letter recognition, open syllables, closed syllables, meaningful words, and short sentences. Correct and fluent responses received a score of 1, while incorrect or stalled responses received 0.

Table 1. Data Collection Techniques and Instruments

Technique	Instrument	Respondents / Purpose
Expert validation	Validation sheet (1–5 Likert scale)	3 experts
Teacher response	Response questionnaire (1–5 Likert scale)	1 Grade 1 teacher
Student response	Response questionnaire (1–5 Likert scale)	4 students in limited trial; 13 in field trial
Learning outcome test	Early reading performance test (18 tasks)	13 students (pretest–posttest)
Observation	Learning-process observation sheet	Researcher
Interview	Semi-structured interview guide	Teacher and selected students
Documentation	Photos/videos of activities	All development and trial stages

Data Analysis

ADDIE development procedure

Analysis. The analysis stage identified instructional needs, curriculum requirements, and student characteristics. The thesis records difficulties in distinguishing visually similar letters such as b–d and p–q, combining syllables, and constructing meaningful words. The curriculum analysis focused on the Reading and Viewing element for Phase A. The student analysis considered the need for concrete and visually accessible learning experiences.

Design. The product blueprint specified a layered circular structure with approximately 10–25 cm disc diameters, contrasting colors, letter and syllable sequences, a viewing window,

and a teacher-use guide. The design stage also prepared expert-validation instruments, teacher and student response questionnaires, observation and interview guides, and the early-reading performance assessment.

Development. The prototype was produced from locally available recycled plastic materials and then assessed by three experts representing instructional design, content/material, and learning-media perspectives. The thesis records formative revisions, including variation in printed-letter fonts and correction of duplicated letters in the disc layout. Only after these revisions was the product taken to classroom trials.

Implementation. The product was first examined in a limited trial involving four students. The purpose was to observe readability of instructions, ease of rotation, and students’ immediate responses. The field trial then involved all 13 Grade 1 students for two meetings. The teacher facilitated the activities while students manipulated the disc to identify letters, construct syllables, and read words and short sentences.

Evaluation. Formative evaluation occurred throughout the ADDIE cycle. The final evaluation integrated expert validity, teacher and student practicality, and descriptive pretest–posttest learning profiles. The thesis does not use inferential hypothesis testing; therefore, the increase in scores is interpreted descriptively and in relation to the context of the single class.

Measurement and interpretation

Expert validation and practicality were scored on a five-point Likert scale. The percentage was calculated by dividing the obtained score by the maximum possible score and multiplying by 100. The thesis uses four interpretation bands: 81–100% = highly valid/highly practical; 61–80% = valid/practical; 41–60% = sufficient; and $\leq 40\%$ = not valid/not practical. For learning outcomes, the class mean and classical mastery were calculated from 13 students. The predefined classical-mastery target in the thesis was 85% of students reaching the minimum score of 85.

The field trial therefore has two complementary outputs: product-quality evidence from expert and user responses, and a descriptive learning profile from pretest and posttest performance. This combination allows the product to be discussed in terms of validity, usability, and observed classroom development while maintaining the contextual limitation of a one-class trial.

Validity and practicality were analyzed descriptively using the percentage of obtained scores relative to the maximum possible score. The resulting percentages were interpreted using the classification adopted from Riduwan (2018). The thesis classifies 81–100% as Highly Valid/Highly Practical, 61–80% as Valid/Practical, 41–60% as Sufficient, and $\leq 40\%$ as Not Valid/Not Practical.

Table 2. Validity and Practicality Classification

Percentage	Validity	Practicality
81–100%	Highly Valid (Highly Feasible)	Highly Practical
61–80%	Valid (Feasible)	Practical
41–60%	Sufficient (Conditionally Feasible)	Sufficiently Practical
$\leq 40\%$	Not Valid (Not Feasible)	Not Practical

Effectiveness was described by comparing the class mean and classical learning mastery between pretest and posttest. The thesis defines the target for classical mastery as at least 85% of students reaching the minimum early-reading criterion. Because the study was conducted with

one class of 13 students and did not use a control group or inferential testing, the results are interpreted as a descriptive profile of development within the study context.

Results and Discussion (نتائج ومناقشة)

Product Development

The analysis stage identified three main needs: difficulties with visually similar letters such as b-d and p-q, difficulty combining syllables into meaningful words, and limited use of concrete interactive media. The curriculum analysis focused on the Reading and Viewing element of Indonesian Language learning in Phase A.

The product was designed as a four-layer circular disc with diameters ranging from approximately 10 to 25 cm. The main materials were recycled plastic lids, assembled centrally so that the layers could be rotated manually. Letter sequences were arranged with contrasting colors, and the upper layer contained a slot window to focus attention on one letter or word combination. The content progressed from letter recognition to syllable construction and meaningful words, aligned with Grade 1 Indonesian Language learning materials.

During development, the prototype was reviewed by three experts. Their comments were used to revise the product before classroom implementation. The thesis specifically reports revisions concerning the variety of printed-letter fonts and correction of duplicated letters in the layout.



Figure 1. Materials and tools used to produce Cakram Kata.



Figure 2. Final version of the Cakram Kata learning medium.

Expert Validation

The three expert assessments produced an overall mean score of 4.58 and an overall validity percentage of 90.9%, which the thesis classifies as Highly Valid/Highly Feasible.

Table 3. Summary of Expert Validation Results

Validation domain	Mean score	Percentage	Category
Instructional design	4.65	92.5%	Highly Valid
Content/material	4.60	91.7%	Highly Valid
Learning media	4.50	88.5%	Highly Valid
Overall	4.58	90.9%	Highly Valid

For instructional design, the reported percentages ranged from 87% for media materials to 95% for presentation and evaluation instruments. Content validation ranged from 87% for media content to 95% for presentation. Media validation ranged from 87% for material/media feasibility to 90% for presentation and evaluation instruments. These results indicate that the prototype met the thesis-defined minimum validity requirement before implementation.

The detailed component scores show that the strongest areas were presentation and evaluation in the instructional-design validation, while the learning-media validation remained above the thesis threshold for the highest category in every reported aspect. These results were obtained before classroom implementation and therefore function as formative evidence that the prototype was sufficiently ready for user trials.

Table 4. Detailed expert-validation results

Validation domain	Aspect	Mean score	Percentage	Category
Instructional design	Media materials	4.30	87%	Highly Valid
Instructional design	Media feasibility	4.70	93%	Highly Valid
Instructional design	Presentation	4.80	95%	Highly Valid
Instructional design	Evaluation instrument	4.80	95%	Highly Valid
Content/material	Media content	4.30	87%	Highly Valid
Content/material	Presentation	4.80	95%	Highly Valid
Content/material	Evaluation instrument	4.70	93%	Highly Valid
Learning media	Media materials	4.30	87%	Highly Valid
Learning media	Media feasibility	4.30	87%	Highly Valid
Learning media	Presentation	4.50	90%	Highly Valid
Learning media	Evaluation instrument	4.50	90%	Highly Valid

Limited Trial and Field Practicality

A limited trial with four students was used to observe the readability of instructions and the ease of manipulating the disc. The field trial then involved all 13 Grade 1 students for two meetings. Classroom activities incorporated visual, tactile, and kinesthetic engagement, with the teacher facilitating the use of the disc and students rotating the layers to form syllables and words.



Figure 3. Teacher activity during implementation of Cakram Kata.



Figure 4. Students using Cakram Kata during the field trial.

Table 4. Practicality Results from Teacher and Students

Respondent	Mean score	Percentage	Category
Grade 1 teacher	4.50	90%	Highly Practical
Students (field trial)	4.85	98%	Highly Practical

The teacher response reached 90%, classified as Highly Practical. The 13 student responses produced a totalscore of 1,021 out of a possible 1,040, equivalent to 98%, also classified as Highly Practical. The student questionnaire covered ease of understanding the letter/word material, ease of rotating the disc, motivation to read, suitability of the physical form, clarity of visual instructions, active involvement, enjoyment, comfort, and satisfaction with the product.

The limited-trial questionnaire also recorded a 97% practicality result (mean 4.85/5) across ten student-oriented indicators, including understanding of letter/word material, ease of rotating the disc, motivation to read, clarity of visual instructions, active participation, independent use, and satisfaction with the physical appearance.

Table 5. Selected indicators from the limited student trial

Indicator	Mean	Percentage	Interpretation
Understanding letters/words	5.00	100%	Very easy
Ease of rotating the disc	4.80	96%	Very easy
Motivation to enjoy reading	5.00	100%	Very positive
Suitability of the physical form	4.50	90%	Very suitable
Clarity of visual instructions	4.80	96%	Very clear
Understanding teacher instructions	5.00	100%	Very clear
Active participation in rotating the disc	5.00	100%	Very active
Enjoyment of word-building activity	5.00	100%	Very positive
Comfort with independent activity	4.50	90%	Very comfortable
Satisfaction with physical appearance	5.00	100%	Very satisfied
Overall	4.85	97%	Highly Practical

Early Reading Achievement

The pretest consisted of 18 performance tasks. At the initial stage, the class mean was 66.15. Six of the 13 students (46.15%) reached or exceeded the reported minimum score of 85, while seven students (53.85%) remained below that level. The thesis describes recurring difficulties in distinguishing b–d and p–q and in reading closed syllables and more complex words.

After two implementation meetings using Cakram Kata, the posttest class mean increased to 86.32. Eleven of the 13 students (84.61%) were reported to have reached the minimum score of 85, while two students (15.39%) still required further individual support.

Table 5. Pretest and Posttest Profile of Early Reading Achievement

Indicator	Pretest	Posttest
Class mean	66.15	86.32
Students reaching ≥ 85	6 of 13	11 of 13
Classical mastery	46.15%	84.61%

The increase in the class mean and the improvement in the number of students reaching the reported criterion provide descriptive evidence of learning development within the trial. The thesis interprets these findings as evidence that Cakram Kata was effective in supporting early reading. At the same time, the reported posttest mastery of 84.61% should be read together with the thesis-defined 85% target and the absence of inferential statistical testing or a control group; the result is therefore contextual rather than a statistical estimate of causal effect.

The posttest result should be interpreted carefully against the predefined 85% classical-mastery target: 84.61% (11 of 13 students) is very close to, but does not numerically reach, 85%. The evidence therefore supports a substantial descriptive improvement in the class profile, while the thesis-level target was not fully attained.

Discussion

Validity as formative evidence

The 90.9% overall validity result should be understood as the outcome of formative review across three domains. The instructional-design expert result was 92.5%, content/material validation was 91.7%, and learning-media validation was 88.5%. The three values are close to one another, suggesting that the product was not judged acceptable on only one dimension. The revision comments were also operational: the thesis records the need for greater variation in printed-letter fonts and correction of duplicated letters. The revision process is consistent with the iterative logic of ADDIE described by Branch (2009), Dick et al. (2015), Suparman (2021), and Wahono (2023).

Practicality and the role of manipulation

Teacher practicality reached 90%, while the field-trial student response reached 98%. The student indicators show particularly positive responses to the ability to rotate the disc, understand the visual instructions, participate actively, and enjoy building words. These responses are consistent with the product’s physical design: the learner does not only look at a printed word but performs a sequence of visual selection, hand movement, and oral reading. The result is therefore compatible with the theoretical rationale in the thesis that concrete and multisensory media can reduce the abstraction of early reading tasks.

Relationship to prior studies

The pattern of findings is comparable in direction to the studies reviewed in the thesis. Sari and Rahman (2021), Harpiani (2021), Sani et al. (2022), Kurnia (2022), Rosmidar et al. (2024), and Meo Soro and Awe (2025) all concern concrete letter, word, or picture-word media. Govorova et al. (2023), Pratiwi and Suryana (2023), and Wijayanti et al. (2024) are particularly relevant because

their media also involve manipulation, rotation, or wheel-like structures. The present product differs in its specific layered-disc construction and its use of recycled local materials, while retaining the common principle of active manipulation.

Descriptive learning development

The class mean increased by 20.17 points, from 66.15 in the pretest to 86.32 in the posttest. The number of students reaching 85 increased from 6 to 11, and the corresponding classical-mastery percentage increased from 46.15% to 84.61%. These changes are educationally meaningful within the observed class, but the study design does not permit a causal or statistical-generalization claim. The increase occurred after two implementation meetings and without a comparison group; consequently, other influences cannot be separated from the use of the product.

The remaining gap is also informative. Two students remained below the minimum score in the posttest, and the final classical mastery of 84.61% was slightly below the 85% target. The thesis therefore recommends longer implementation, broader trials, and additional individual support. This limitation is important because it keeps the interpretation aligned with the actual evidence rather than treating the product as uniformly effective for every learner.

Contribution and implementation implications

The product's practical contribution lies in its accessibility. The thesis describes a portable, non-digital medium made from locally available recycled materials, with a production cost of approximately Rp30,000. The medium does not depend on electricity or internet connectivity, which can be advantageous where classroom technology is limited. At the same time, the thesis proposes a future digital adaptation so that the same instructional blueprint can be extended to interactive or gamified environments. This suggestion is framed as future development rather than as a tested outcome of the present study.

The validity results suggest that the product design, content, and media characteristics were considered appropriate by the participating experts. The overall 90.9% score was obtained after formative revisions, including adjustments to letter-font variation and duplicated-letter placement. This supports the development logic of ADDIE, in which expert feedback is used to refine a prototype before wider implementation.

The practicality findings are consistent with the intended physical characteristics of the product. The medium is manually operated, portable, inexpensive, and based on materials that are readily available locally. Its circular layers and slot window allow students to manipulate one visual element at a time. In the thesis, these features are linked to concrete and multisensory learning needs of Phase A students.

The learning-outcome profile also shows a marked descriptive improvement: the mean increased by 20.17 points, from 66.15 to 86.32, and the number of students reaching 85 increased from 6 to 11. The thesis relates this development to the repeated visual, tactile, and kinesthetic practice provided by the disc, particularly for distinguishing mirrored letters and combining syllables. Because the study used a single class and descriptive analysis, the finding is best understood as evidence from this implementation context rather than a generalized causal effect.

The findings are broadly aligned with the previous studies cited in the thesis, including work on manipulative media, simple literacy games, visual-kinesthetic learning, and word-wheel media. The contribution of the present development is the integration of those characteristics into a low-cost, recycled-material, manually operated medium designed for the specific early-reading needs identified at SDN Pacet 2 Mojokerto.



Conclusion (خاتمة)

The study developed Cakram Kata using the ADDIE model as a non-digital manipulative medium for early reading in Grade 1 (Phase A) at SDN Pacet 2 Mojokerto. The product consists of layered rotating discs containing letters and syllable/word combinations, supported by contrasting visual elements and a slot window.

Expert validation resulted in an overall score of 90.9%, classified in the thesis as Highly Valid. Practicality reached 90% according to the teacher response and 98% according to student responses, both classified as Highly Practical. The descriptive learning profile showed an increase in the class mean from 66.15 to 86.32 and an increase in classical mastery from 46.15% to 84.61%. The thesis interprets these findings as indicating that Cakram Kata is feasible, practical, and effective for supporting early reading in the study context.

The study was limited to one Grade 1 class of 13 students and two field-trial meetings. The thesis therefore recommends broader trials across several elementary schools and further development, including the possibility of adapting the medium into a digital interactive version. The physical durability of the recycled-plastic product under long-term intensive use also requires further examination.

In addition to the small sample and short implementation period, the thesis notes that the physical durability of the recycled-plastic product under long-term intensive use was not tested. These constraints mean that future research should examine durability, retention of reading skills, and transfer across schools before broader claims are made.

Acknowledgment (شكر وتقدير)

The author expresses gratitude to Universitas PGRI Adi Buana Surabaya, the teachers and students of Grade 1 at SDN Pacet 2 Mojokerto, the participating expert validators, and all parties who supported the implementation of the research and development activities.



Bibliography (مراجع)

- Achmad Noor Fatirul. (2022). Media Pembelajaran dan Inovasi Instruksional. Surabaya: Penerbit UNIPA Press.
- Adams, M. J. (1990). Beginning to Read: Thinking and Learning about Print. Cambridge, MA: MIT Press.
- Anthony, J., & Francis, D. (2005). Development of Phonological Awareness. Current Directions in Psychological Science. New York: Routledge.
- Branch, R. M. (2009). Instructional Design: The ADDIE Approach. New York: Springer.
- Degeng, I. N. S. (2021). Ilmu Pembelajaran. Bandung: PT Remaja Rosdakarya.
- Dick, W., Carey, L., & Carey, J. O. (2015). The Systematic Design of Instruction (8th ed.). Boston: Pearson.
- Djou, Y., et al. (2022). Visual-Kinesthetic Media and Early Reading Skills in Primary Learners. Journal of Early Literacy Studies, 14(2), 55–67.
- Ehri, L. (2022). Phases of Learning to Read Words. New York: Guilford Press.
- Fatria. (2023). Media Pembelajaran sebagai Alat Bantu Proses Belajar. Jurnal Teknologi Pendidikan, 8(2), 137–150.
- Govorova, E., Benítez, A., & Cuesta, M. (2023). Simple Manipulative Games and Early Literacy Skills. Early Childhood Education Journal, 51(3), 455–470.

- Harpiani. (2021). Peningkatan Kemampuan Membaca Permulaan Peserta didik Kelas 1 melalui Media Kartu Huruf. *Shautut Tarbiyah Journal*, 27(1), 45–56.
- Indrawati. (2021). *Media Pembelajaran untuk Pendidikan Dasar*. Jakarta: Prenadamedia Group.
- Kurnia, T. (2022). Pengembangan Media Kartu Huruf dalam Pembelajaran Membaca Permulaan. *PEDADIDAKTIKA*, 9(1), 22–34.
- Meo Soro, A., & Awe, D. (2025). Upaya Meningkatkan Kemampuan Membaca Permulaan melalui Media Kartu Kata Bergambar di SDK Wolowio. *Jurnal Pendidikan Guru Sekolah Dasar*, 13(1), 11–25.
- Munir. (2017). *Pembelajaran Digital*. Bandung: Alfabeta.
- Piaget, J. (1970). *Science of Education and the Psychology of the Child*. New York: Orion Press.
- Pratiwi, R., & Suryana, D. (2023). Efektivitas Media Cakram Kata terhadap Kemampuan Membaca Peserta didik Kelas 1. *Jurnal Pendidikan Dasar Nusantara*, 8(3), 155–168.
- Riduwan. (2018). *Belajar Mudah Penelitian untuk Guru-Karyawan dan Peneliti Pemula*. Bandung: Alfabeta.
- Rosmidar, R., Adawiyah, R., & Irawati, S. (2024). Peningkatan Membaca Permulaan melalui Media Kartu Kata Bergambar pada Anak Usia 5–6 Tahun. *Inovasi Pendidikan Anak Usia Dini*, 9(1), 88–101.
- Rufii. (2023). Media Pembelajaran Multisensori dalam Pendidikan Sekolah Dasar. *Jurnal Inovasi Pendidikan*, 14(2), 22–34.
- Sabariah, S., et al. (2025). *Integrasi Media Pembelajaran dalam Pengembangan Guru IPS*. Surabaya: Universitas PGRI Adi Buana.
- Sani, R., Widjojoko, S., & Wardana, N. (2022). Penggunaan Media Kartu Kata untuk Meningkatkan Kemampuan Membaca Permulaan. *Jurnal Pendidikan Dasar*, 10(2), 44–56.
- Santrock, J. W. (2021). *Child Development* (15th ed.). New York: McGraw-Hill.
- Sari, Y., & Rahman, D. (2021). Pengembangan Media Kartu Putar untuk Meningkatkan Kemampuan Membaca Permulaan. *Jurnal Basicedu*, 5(3), 1122–1133.
- Stanovich, K. E. (1986). Matthew Effects in Reading: Some Consequences of Individual Differences in the Acquisition of Literacy. *Reading Research Quarterly*, 21(4), 360–407.
- Suparman, A. (2021). *Desain Instruksional Modern*. Jakarta: Erlangga.
- Wahono, R. S. (2023). *Pengembangan Media dan Bahan Ajar*. Yogyakarta: Samudra Biru.
- Wijayanti, P., Suryanti, I., & Suprihatin, T. (2024). Pengembangan Media Word Wheel untuk Literasi Awal Fase A. *Jurnal Inovasi Pendidikan Dasar*, 9(1), 66–79.
- Yaniawati, P., et al. (2022). *Media Pembelajaran Digital dalam Pembelajaran Abad 21*. Bandung: Remaja Rosdakarya.