

Development of Concrete Learning Media “Letter Roulette” to Improve Early Reading Skills of Grade 1 Elementary School Students

Taskiyatun Nafs Azzahra
SD Islam Baiturrahman
tazkiatunzahra43@guru.sd.belajar.id

*** Corresponding author’s institutional address**

Jln. Komplek Polri, No. 03 RT 9 RW 8 Ciracas Jakarta Timur

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Abstract: This research aims to develop the concrete learning media Rolet Huruf to improve early reading skills among first-grade elementary school students. The study employs the ADDIE development model; Analysis, Design, Development, Implementation, and Evaluation. The validation results show that the Rolet Huruf media obtained an average score of 86% from media experts and 87% from material experts, both categorized as “Good” and feasible for use in learning activities. Based on the experts’ feedback, improvements were made in letter clarity, variation of syllables, and media stability. The classroom implementation demonstrated that students were more enthusiastic, active, and confident in reading, while teachers found the media effective in facilitating engaging and interactive literacy learning. The findings indicate that Rolet Huruf not only enhances students’ early reading ability but also increases motivation and participation. Therefore, this media is declared valid, practical, and effective for use in first-grade literacy instruction. Future studies are encouraged to develop a digital version of Rolet Huruf and test its broader application in various school settings.

Keywords: *early reading, concrete learning media, Letter Roulette, elementary school, ADDIE model.*

INTRODUCTION

Students’ language skills consist of four essential components: reading, writing, listening, and speaking. Among these, reading is considered the foundational skill that must be mastered by students, especially those in lower elementary grades (Porter et al., 2024). This skill is closely related to all learning activities, as reading proficiency directly influences students’ ability to understand lessons across subjects and to process information from various learning resources (Rohimah, 2021). Therefore, reading ability should be developed early, since students who read fluently tend to achieve better overall learning outcomes.

However, according to Annela et al. (2023), many Grade 1 students are still not fluent readers due to limited letter recognition skills. Some children find it difficult to distinguish between letters such as “b” and “d” or “p” and “q,” and struggle to spell or assemble words correctly. These challenges indicate that learning to read requires more than memorizing letters, it involves understanding the relationships between sounds, symbols, and meanings.

At the elementary level, reading instruction begins with initial reading, which serves as the foundation for students’ later reading stages. Teaching initial reading in Grade 1 is crucial to prepare children for more advanced literacy skills. This learning process should be conducted through engaging and enjoyable activities that motivate students and prevent learning fatigue (Saptono, 2025). One of the most influential factors in successful reading instruction is the learning media used. According to Tuma (2021), instructional media serve as intermediaries in delivering learning messages, helping to clarify material and make it more understandable (Junaidi et al., 2023). For Grade 1 students who, according

to Piaget, are at the concrete operational stage tangible and manipulative media are particularly effective because they provide hands-on experiences that align with their cognitive development.

Despite this, many teachers still rely on conventional tools such as blackboards and textbooks, which often lead to monotonous and less interactive learning experiences. This lack of engaging media contributes to students' low motivation and reading interest (Styaningsih et al., 2025). To address this, teachers need to design innovative, concrete learning media that can actively involve students in the learning process. As stated by Kusbudiningsih (2021), concrete media can significantly increase the learning interest of lower-grade students. Likewise, Faqih et al. (2024) emphasizes that concrete instructional tools provide students with direct experiences that make abstract concepts more comprehensible and relevant to their daily lives.

The use of instructional media is also supported by cognitive learning theory, which highlights the need for tangible experiences in building understanding among students in the concrete operational stage (Arifin et al., 2021). (Imanulhaq & Ichsan, 2022). Media that stimulate students' thoughts, feelings, and attention can foster motivation and improve learning outcomes (Lestari & Rasilah, 2025). Therefore, choosing appropriate media for children's developmental stages is essential to ensure effective learning.

One innovative example of such media is the Letter Roulette, a concrete learning tool designed to improve initial reading skills among Grade 1 students. This educational game consists of three rotating circles divided into syllables or simple words. By spinning the roulette, students can form various letter or syllable combinations, which they then read aloud. This activity helps train letter recognition, spelling, and word formation through play, thus combining learning and entertainment in a single process (Tumangger et al., 2024). The colorful and interactive design makes it suitable for children's learning characteristics and helps sustain their focus during reading lessons.

Previous studies have demonstrated the benefits of similar media. Nabila et al. (2023) found that educational games like the Rotating Alphabet can enhance early reading skills in children aged 5–6 through interactive syllable-based activities. Hendarsih & Nurhidayah (2023) also reported that such media increase student engagement, as learners eagerly anticipate letter combinations and participate directly in reading exercises. Likewise, Novela & Muryanti (2023) revealed that roulette-based media effectively improve early reading skills and boost motivation in children aged 5–6. Moreover, Faisal (2024) emphasized that incorporating game elements, such as rotation and instant feedback, can heighten student motivation and learning outcomes.

However, despite these findings, research on the use of concrete roulette-based media specifically for Grade 1 initial reading remains limited. Most studies have focused on higher education or general reading comprehension. Consequently, this study seeks to fill that gap by developing Letter Roulette, a concrete instructional medium designed to enhance the initial reading skills of Grade 1 elementary school students through interactive, engaging, and developmentally appropriate learning experiences.

METHODOLOGY

This study is a research and development (R&D) study aimed at producing concrete learning media, namely the Letter Roulette, to improve initial reading skills of Grade 1 elementary school students. This type of research was chosen because its primary focus is on developing a learning product while simultaneously evaluating its effectiveness. The development model used in this study is ADDIE (Analysis, Design, Development, Implementation, Evaluation), which is systematic and structured. The ADDIE model is widely used because its stages represent a systematic approach to instructional development (Ranuharja et al., 2021). By using this model, each stage of media development can be conducted clearly, measurably, and evaluated for further improvement.

The research subjects were Grade 1 elementary school students, as initial reading is a fundamental skill at the beginning of formal education, and students at this stage require learning media that are engaging, concrete, and interactive to recognize letters and words. The research object was the concrete learning media Letter Roulette, an educational game in the form of a roulette wheel containing letters, syllables, or simple words. This media was developed to train students in recognizing letters, constructing words, and reading in an enjoyable manner, in accordance with the learning characteristics of elementary school children.

This study followed the five stages of the ADDIE model. **The first stage** is Analysis, in which the researcher identified the needs of Grade 1 students in initial reading instruction. The analysis was conducted through classroom observations, interviews with Grade 1 teachers, and a literature review related to concrete learning media. The information obtained was used to determine the basic competencies, topics, and types of letters and words to be included in the Letter Roulette. This stage aimed to understand the students' learning context, the challenges they face, and the theoretical basis supporting the media development.

The second stage is Design. At this stage, the researcher designed the concept of the Letter Roulette, including the shape of the roulette wheel, the number of letters and words, and the learning activities integrated with play. A storyboard or usage scheme for the media was also developed, along with student worksheets to be used in conjunction with the roulette. The design stage aimed to ensure that the media developed aligned with the learning principles for elementary-aged children, was engaging, and facilitated the initial reading process.

The third stage is Development, in which a prototype of the Letter Roulette was created according to the previously designed plan. Initial reading materials were prepared based on the Grade 1 curriculum, and game elements and visual features were incorporated into the media to enable students to learn in an enjoyable manner. The development stage represents the physical realization of the media design, which will later be tested and validated.

The validation data for the Letter Roulette media were analyzed using a Likert scale ranging from 1 to 5, which was employed to measure feasibility based on expert assessments. The scale consisted of the following:

<i>No</i>	<i>Score</i>	<i>Respon</i>
1.	Score 1	Very Poor
2.	Score 2	Poor
3.	Score 3	Fair
4.	Score 4	Good
5.	Score 5	Very Good

Table. 2.1 Likert Scale (Komalasari & Masyitoh, 2022)

Each assessment item is assigned a score based on the validator's response. Then, the average score for each aspect is calculated to determine the feasibility. The average score is converted into a percentage using the formula:

<i>Achievement Level (%)</i>	<i>Qualification</i>	<i>Description</i>
90–100	Very Good	Very Good
75–89	Good	Good
65–74	Fair	Fair
55–64	Poor	Poor
≤ 54	Very Poor	Very Poor

Table. 2.2 Calculation Results (Arsini, K. R., & Kristiantari, M. G. R. 2022)

This analysis is used to determine the feasibility level of the Letter Roulette media and serves as the basis for revising the product according to feedback from media and content validators.

The fourth stage is Implementation. At this stage, the Letter Roulette media was tested on a limited scale with first-grade elementary school students as the research subjects. The implementation activities aimed to determine how the media functioned in real classroom situations and to assess students' responses to its use. The teacher acted as a facilitator guiding the learning process using the media, while the researcher conducted observations on students' engagement, enthusiasm, and any challenges that arose during the learning activities.

In addition to direct observation, a student learning interest questionnaire was also distributed during this stage to measure the extent to which the media could attract attention, increase motivation, and foster enthusiasm for learning early reading. The results of this questionnaire served as supporting data to assess the effectiveness and appeal of the developed instructional media.

Thus, the implementation stage not only focused on applying the media in classroom settings but also functioned to obtain direct feedback from users (students) as a basis for improving and refining the media in the subsequent stage.

The fifth stage is Evaluation. In this stage, all data and findings obtained throughout the development process were collected and thoroughly analyzed. The evaluation aimed to review the results of implementing the Letter Roulette media in terms of feasibility, effectiveness, and the responses of both students and teachers toward its use in early reading instruction.

Evaluation activities included examining the results of observations, interviews, and questionnaires administered to students and teachers during the implementation phase. The data served as the foundation for identifying the strengths and weaknesses of the media such as ease of use, letter readability, durability, and the extent to which it could attract interest and enhance student engagement in reading activities.

Based on the analysis results, revisions and improvements were made if any deficiencies were identified, whether in terms of design, content, or technical functionality. These revisions aimed to ensure that the final product achieved optimal quality and was ready for real classroom application.

The evaluation stage also served as an essential step to ensure that the media fulfilled its intended purpose to support a concrete, interactive, and enjoyable reading learning process for first-grade students. Therefore, evaluation functioned as a reflective process to guarantee that the Letter Roulette learning media was not only theoretically feasible but also practically effective in actual classroom contexts.

RESULT AND DISCUSSION

This research focuses on the feasibility of the Letter Roulette concrete learning media and students' responses to its use in early reading instruction for first-grade elementary school students. The study employs the ADDIE development model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. Each stage is carried out systematically and sequentially to produce a feasible, engaging, and effective learning medium that enhances students' early reading skills.

Analysis Stage

The analysis stage serves as the initial step in developing the Letter Roulette media. At this stage, the researcher focused on identifying learning problems that occur in real classroom settings, particularly those related to early reading activities in first-grade elementary school. In-depth interviews were conducted with first-grade teachers, and questionnaires were distributed to students to obtain a comprehensive understanding of the current conditions of early reading instruction.

The results revealed that teachers still rely mainly on textbooks and blackboards as the primary sources and media of instruction. There has been no use of concrete, manipulative, or interactive learning media to help students recognize letters, syllables, and simple words. This condition makes reading activities monotonous and less varied, leading to low student interest and limited classroom interaction. Many students still struggle to identify letters, spell syllables, and distinguish similar sounds. Moreover, some students showed low self-confidence when asked to read aloud in front of the class, mainly due to one-way, teacher-centered learning that provides minimal direct experience.

These findings indicate that early reading instruction requires an innovative medium that is concrete, visually appealing, easy to use, and aligned with the cognitive characteristics and developmental needs of first-grade students. Therefore, the researcher developed Letter Roulette as a learning medium to support students in learning to read more actively, interactively, and joyfully.

Design Stage

In the design stage, the researcher began creating a concrete learning medium named Letter Roulette. This medium was designed as a visual and kinesthetic learning aid to enhance first graders' early reading abilities. The design aligns with the characteristics of young learners who enjoy play, movement, and hands-on learning experiences.

The Letter Roulette consists of three layered circular wheels, each divided into eight equal parts. Every section contains a letter or syllable printed in bright, contrasting colors such as red, yellow, green, blue, and pink to attract attention and improve focus. The letters are printed in large, clear fonts to ensure visibility from a distance.

Each layer can be rotated independently, allowing students to generate various combinations of letters and syllables for example, forming simple words like ibu (mother), baju (shirt), or bola (ball). This not only practices spelling but also enhances students' phonemic awareness and creativity in recognizing sound patterns. A pointer is placed at the top to indicate which letter or syllable the wheel stops on, making the process interactive similar to a "wheel of fortune" game thus fostering curiosity and enthusiasm. Teachers can utilize this medium for activities like syllable reading competitions, word guessing games, or writing exercises based on the results of the spin.

The researcher also developed student activity sheets integrated with the use of the media. These worksheets include simple tasks such as "Write the word shown by the roulette" or "Create a sentence using the word you got." The goal is to strengthen connections between reading, writing, and critical thinking skills. The design of Letter Roulette not only considers aesthetic and motivational factors, but also pedagogical principles, including:

- Suitability with the cognitive development of 6–7-year-old children, who are still in Piaget's concrete operational stage.
- Integration of learning through play, which supports natural and enjoyable literacy learning.
- Accessibility and safety, as the media is made from lightweight plywood and laminated thick paper for durability and safe use by children.

Through this interactive and visually engaging design, Letter Roulette aims to become an innovative concrete learning medium that not only assists students in spelling and reading simple words but also boosts their interest and motivation toward literacy activities.

Development Stage

The development stage is a crucial phase in this research since it involves the production and validation of the designed learning media. The feasibility test aims to evaluate whether Letter Roulette meets the standards of a good learning medium in terms of appearance, content, usability, and effectiveness in supporting early reading activities. The validation process involved three experts with different qualifications:

- Media Expert: Zulherman, Ph.D — Lecturer at Universitas Muhammadiyah Prof. Dr. Hamka.
- Material Expert: Mrs. Nur Aidah, S.Pd — First Grade Teacher at SD Islam Baitur-rahman.
- Material Expert: Mrs. Mardalina Puspitasari, S.Pd — First Grade Teacher at SD Negeri Pekayon 16 Pagi.

Assessment Aspect	Achievement Level	Qualification
Media Expert	86%	Good
Material Expert	87%	Good

Table 3.1 Validation Results

The three experts provided evaluations and constructive feedback on the developed media. In general, the validation results indicated that the Letter Roulette media met the feasibility criteria for use in beginning reading instruction. However, several aspects required re-refinement to enhance its quality, effectiveness, and efficiency. Feedback from the experts included the following points:

- The Letter Roulette media was considered attractive and innovative, as it helps students recognize letters and syllables in an enjoyable way.

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- The clarity of letters needed improvement through better selection of size and color contrast to make them more readable for young learners.
 - The content of the wheel should be diversified by adding more syllables and simple words to prevent monotony during learning activities.
 - The addition of challenge cards, such as instructions like “Say a word using this letter,” was suggested to train students’ thinking and language skills.
 - The pointer mechanism of the wheel needed to be adjusted to ensure precision and safety during use.
 - The arrangement of letters should align with vocabulary commonly known by first-grade students to make it more contextual and relevant.

Based on this feedback, the researcher made revisions to the media, including enlarging the letter size, improving the rotation mechanism for better stability, adding more content variety, and including challenge cards. After revisions, the media was revalidated by the experts and declared valid, feasible, and ready for classroom implementation.

Implementation Stage

The implementation stage was carried out in a first-grade classroom during Indonesian language lessons, specifically focusing on beginning reading skills. The objective of this stage was to test the practicality of the Letter Roulette media in real classroom settings, assess student and teacher responses, and determine its effectiveness in enhancing student interest and motivation in learning to read. Implementation involved the first-grade teacher as a facilitator and the researcher as an observer.

During the activity, students took turns spinning the wheel and reading the letters or syllables indicated by the pointer. The results showed that students were enthusiastic, active, and motivated throughout the learning process.

They enjoyed the activity because it felt like a game, making the classroom atmosphere more lively and engaging. The teacher reported that the media successfully captured students’ attention and simplified the process of recognizing letters and reading syllables. Furthermore, previously passive students became more confident when reading in front of their peers.

Observations indicated that the use of Letter Roulette had a positive impact on students’ motivation and participation in reading lessons. Peer interaction increased, the learning environment became more conducive, and the achievement of learning objectives improved.

Evaluation Stage

The evaluation stage was the final phase of the ADDIE development model, aimed at assessing the effectiveness and sustainability of the instructional media after implementation. Evaluation considered expert validation results, classroom observations, and feedback from both teachers and students.

Based on the evaluation findings, the Letter Roulette media met the content, visual, and usability criteria for use in early reading instruction. Teachers reported that the media effectively helped students recognize letters and practice spelling in a fun and engaging way. Students demonstrated positive responses and high enthusiasm during the learning process (Liu et al., 2024).

In addition, the media was found to be user-friendly, safe, and appropriate for the developmental characteristics of first-grade learners. The evaluation process also indicated that the media has potential for further improvement for instance, by integrating simple digital features or adding thematic variations to ensure continued relevance in future learning contexts (Putri & Rati, 2022). In conclusion, the research results show that Letter Roulette is a valid, feasible, and effective concrete learning medium for improving early reading skills among first-grade students. Beyond functioning as a teaching aid, this media also serves as a tool to foster motivation, confidence, and joy in learning among young learners.

CONCLUSION

This study successfully developed a concrete learning medium called Letter Roulette (Letter Roulette) to improve the early reading skills of first-grade elementary school students. Based on the

stages of the ADDIE model, the media proved to be valid and feasible for use, as supported by high validation scores from media and material experts along with constructive feedback that was subsequently addressed.

Classroom implementation demonstrated that students became more enthusiastic, active, and confident in reading, while teachers reported that the media made it easier to facilitate interactive, engaging, and enjoyable learning experiences.

The findings indicate that the use of Letter Roulette not only enhances early reading skills but also fosters motivation, focus, and active participation among students. The media integrates concrete learning experiences with play-based activities, aligning with the cognitive characteristics of children in the concrete operational stage, thereby supporting early literacy development effectively.

The implications of this research highlight the importance of innovative, play-based concrete media in elementary education, particularly to help students overcome difficulties in early reading and to enhance their learning experience in a joyful and meaningful way. The Letter Roulette media can serve as an alternative or complementary tool to conventional methods such as textbooks or blackboards.

The limitations of this study include a sample restricted to one first-grade class and a manually operated media format. Future research is recommended to develop a digital version of Letter Roulette or expand its implementation across different schools and grade levels to evaluate its broader effectiveness.

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