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Development of magic box media in enhancing reading skills: A study on second-grade students at SDN 2 Tilogkabila

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Abstract

Reading proficiency is fundamental to primary education, yet many second-grade students at SDN 2 Tilogkabila face persistent challenges, including decoding syllables and constructing coherent sentences. This study aimed to develop and evaluate the “Magic Box,” an innovative instructional medium designed to enhance reading skills through interactive, tactile, and visually engaging content. Employing the ADDIE model, the research involved stages of analysis, design, development, implementation, and evaluation to create and refine the media. The study assessed the validity, practicality, and effectiveness of the “Magic Box” through expert validation, small- and large-scale testing, and pre- and post-tests with 22 second-grade students. Results revealed that the media was highly valid (90%-92%), practical (95%-97%), and effective in improving decoding, fluency, and comprehension skills. Students exhibited significant performance gains, while teachers reported enhanced student engagement and motivation during reading activities. The findings demonstrate the potential of the “Magic Box” to transform reading instruction by integrating interactive elements and contextual narratives tailored to young learners. This study contributes to educational innovation by addressing foundational literacy challenges and suggests broader applications of tactile media in primary education. Future research should explore its long-term impact and adaptability across diverse learning contexts.

Keywords: Interactive Learning Media; Early Literacy Development; Tactile Educational Tools; Tactile media

1. Introduction

In the context of primary education, reading emerges as a foundational skill that significantly shapes a student’s cognitive, linguistic, and academic development. According to the Indonesian National Education Standards (Peraturan Pemerintah Nomor 19 Tahun 2005), primary education is designed to foster intellectual and moral growth, preparing students to engage effectively with broader societal challenges. Within this framework, the ability to read is not merely a technical skill but a cornerstone of lifelong learning and personal growth (Hasanah & Nurhasanah, 2018). However, challenges persist in achieving reading fluency among primary students, particularly in the critical early years. These challenges are amplified by insufficient teaching strategies and an over-reliance on traditional learning resources, which often fail to engage students effectively (Rejeki et al., 2020). Addressing these barriers requires innovative instructional tools that not only facilitate learning but also enhance motivation and engagement in reading activities.

Extant literature underscores the importance of integrating educational media to enhance reading competencies. Gerlach and Ely (1971) highlight the role of instructional media as catalysts for improved learning outcomes, enabling students to grasp abstract concepts through visual and interactive stimuli. Similarly, Kustandi (2020) argues that innovative teaching aids can mitigate verbalisms and promote a deeper understanding of complex topics. Particularly in primary education, where students are predominantly in the concrete operational stage of development (Piaget, 1952), tactile and visual learning tools such as “Magic Box” media offer promising solutions. By combining storytelling

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elements, vibrant visuals, and interactive features, these tools can bridge the gap between abstract language concepts and students' cognitive capacities, creating a more engaging learning environment (Yesy Lisnawati, 2023).

Despite the acknowledged importance of innovative teaching aids, reading difficulties remain a persistent issue in many Indonesian schools. Observations at SDN 2 Tilongkabila revealed significant challenges in reading among second-grade students. These challenges range from difficulties in decoding syllables to reading simple sentences fluently. External factors such as limited parental involvement and a lack of practice at home exacerbate these issues. Furthermore, teachers primarily rely on conventional textbooks, which fail to capture students' attention or address their diverse learning needs. Teachers' limited access to engaging and varied teaching media further compounds these problems, resulting in diminished student motivation and reduced effectiveness in reading instruction. These findings align with global trends, where the absence of contextually relevant and stimulating teaching materials often undermines learning outcomes (Wulandari et al., 2023).

Addressing the multifaceted challenges of reading instruction requires a comprehensive solution that integrates pedagogical innovation and practical applicability. Educational researchers and practitioners have advocated for the use of interactive and contextually relevant media to support students' learning journeys (Musfiqon, 2012; Ramdani, 2021). In particular, tactile teaching aids such as the "Magic Box" have gained traction for their ability to engage students through sensory interaction. By combining visual, auditory, and kinesthetic elements, these tools can stimulate curiosity, foster active participation, and enhance retention of learning materials (Ariska & Suyadi, 2020). Moreover, they align with the principles of constructivist learning theories, where students construct knowledge through direct engagement with materials and ideas.

The "Magic Box" media has been successfully utilized in various educational contexts to address reading challenges. For instance, Sulistyowati et al. (2023) demonstrated that implementing the "Magic Box" in fifth-grade classrooms significantly enhanced students' narrative reading skills, with pre-test and post-test results showing marked improvement. Similarly, Disurya et al. (2024) applied the "Magic Box" in mathematics instruction, reporting high levels of practicality and effectiveness in fostering student engagement. These studies emphasize the versatility of the "Magic Box" as an instructional tool across different subjects and age groups. However, the existing body of research predominantly focuses on upper-grade students, with limited exploration of its application in early-grade reading instruction. This represents a critical research gap, particularly in understanding how such media can be tailored to address the specific needs of young learners struggling with foundational reading skills.

In the context of early-grade education, the relevance of interactive and visual media cannot be overstated. According to Zuchdi & Nurhadi (2019), interactive learning tools are particularly beneficial for children aged 7–12, who are in the early stages of developing abstract thinking abilities. The tactile and exploratory nature of tools like the "Magic Box" allows students to internalize learning objectives through concrete experiences. Moreover, these tools provide a platform for integrating local culture and contextual narratives, which can further enhance students' connection to the material (Khusna et al., 2024). However, while the conceptual benefits of the "Magic Box" are well-documented, empirical studies exploring its impact on early-grade reading skills remain scarce. There is a need to examine its effectiveness in fostering decoding skills, fluency, and comprehension among young learners, particularly in linguistically diverse settings like Indonesia.

This study addresses the aforementioned research gap by investigating the development and implementation of the "Magic Box" media to improve reading skills among second-grade students at SDN 2 Tilongkabila. Using the ADDIE model, this study develops a tailored instructional tool that integrates visuals, interactive elements, and contextual narratives to foster student engagement and learning outcomes. By evaluating the tool's practicality, effectiveness, and appeal through rigorous testing, this research seeks to provide empirical evidence on the viability of "Magic Box" media in early-grade reading instruction. This study's novelty lies in its focus on second-grade students, a demographic often underrepresented in educational media research, and its emphasis on the contextual adaptation of the tool to address specific linguistic and cultural needs.

The scope of this study is confined to exploring the impact of the "Magic Box" media on second-grade reading instruction at SDN 2 Tilongkabila. The study aims to evaluate the tool's effectiveness in addressing decoding difficulties, enhancing fluency, and improving comprehension skills. By doing so, it contributes to the broader discourse on educational innovation in primary education, offering practical insights for educators, policymakers, and researchers seeking to improve reading outcomes among young learners.

2. Methodology

This study employed a Research and Development (R&D) approach, specifically adopting the ADDIE model, which includes five stages: Analysis, Design, Development, Implementation, and Evaluation (Dick & Carey, 2005). This methodology was chosen due to its systematic framework, allowing for the development and refinement of instructional media based on iterative testing and evaluation. The research aimed to develop the “Magic Box” as an instructional medium to enhance reading skills among second-grade students. The process involved designing the media, testing its practicality and effectiveness, and revising it based on feedback from experts and students.

The research was conducted at SDN 2 Tilongkabila, located in Bongopini Village, Tilongkabila Subdistrict, Bone Bolango Regency. The school was selected based on preliminary observations, which identified significant challenges in reading instruction among second-grade students. The study involved a total of 22 second-grade students, divided into small and large groups for testing. Additionally, three experts—specialists in material design, media design, and language—were engaged to validate the instructional media.

3. Research Phases

3.1. Analysis Phase

This phase involved identifying the specific challenges and needs related to reading instruction. Observations and interviews with second-grade teachers highlighted several issues, including students’ difficulties with decoding syllables, limited engagement with traditional teaching materials, and the absence of innovative instructional media. Additionally, an analysis of students’ characteristics and learning preferences was conducted to ensure that the media would be suitable for their developmental stage and interests.

3.2. Design Phase

During this phase, the prototype of the “Magic Box” was conceptualized. The design process focused on creating a visually engaging and interactive medium tailored to the reading curriculum for second-grade students. Key elements included:

- Interactive layers within the box featuring text, images, and prompts designed to guide students through basic reading exercises.
- Use of vibrant colors and culturally relevant illustrations to captivate students’ attention and foster a sense of familiarity.
- Alignment of the content with learning objectives outlined in the Indonesian primary education curriculum.

3.3. Development Phase

The development phase entailed the creation of the physical “Magic Box” using design tools such as Canva and Microsoft Word. Materials included cardboard, flannel, printed illustrations, and text inserts, ensuring durability and aesthetic appeal.

Validation by experts was a critical component of this phase. Three experts evaluated the media using Likert-scale questionnaires to assess its content, design, and language aspects. Their feedback was used to refine the product before implementation. Specific validation criteria included clarity of instructions, visual appeal, appropriateness of language, and alignment with educational objectives.

3.4. Implementation Phase

The implementation phase involved testing the “Magic Box” in two stages:

- **Small-Scale Testing:** Conducted with eight students, this phase aimed to identify potential usability issues and gather preliminary feedback on the media’s practicality.
- **Large-Scale Testing:** Conducted with 22 students, this phase assessed the effectiveness of the media in improving reading skills. Students’ performance and engagement were monitored, and feedback was collected through questionnaires.

The collected data from both stages were used to evaluate the media’s practicality, effectiveness, and potential for broader application.

3.5. Evaluation Phase

The evaluation phase focused on analyzing the results of the implementation to determine the overall effectiveness and practicality of the “Magic Box.”

- **Validity Testing:** Scores from the expert validation process were averaged to ensure the media met the required standards. The media was deemed valid with an average score exceeding 80% in content, design, and language categories.
- **Practicality Testing:** Feedback from students and teachers indicated high levels of usability, with percentages of 97% and 95% for small- and large-scale tests, respectively.
- **Effectiveness Testing:** Comparisons of students’ pre-test and post-test scores demonstrated significant improvements in reading fluency, decoding accuracy, and comprehension.

4. Data Collection Instruments

4.1. Interviews

Semi-structured interviews were conducted with teachers to gather insights into the challenges and limitations of existing reading instruction methods. These interviews provided context for the development of the “Magic Box.”

4.2. Questionnaires

Likert-scale questionnaires were distributed to experts and students to evaluate the media’s validity, practicality, and effectiveness. The scoring system ranged from 1 (strongly disagree) to 5 (strongly agree), with specific items targeting aspects such as clarity, engagement, and instructional alignment.

4.3. Tests

Students participated in pre-tests and post-tests to measure their progress in reading skills. The tests were designed to evaluate decoding, fluency, and comprehension, ensuring alignment with

The collected data were analyzed using both qualitative and quantitative methods:

- **Qualitative Analysis:** Feedback from interviews and open-ended questionnaire responses was categorized and synthesized to identify recurring themes and areas for improvement.
- **Quantitative Analysis:** Statistical tools were used to calculate mean scores and percentages for validity, practicality, and effectiveness tests. These metrics provided a robust framework for evaluating the “Magic Box” media’s impact on reading instruction.

The study adhered to ethical research principles, including obtaining informed consent from teachers and parents for student participation. Confidentiality and anonymity of participants were ensured throughout the research process. Additionally, the research design and methods were reviewed and approved by the relevant academic and institutional authorities.

While the findings of this study are promising, several limitations must be acknowledged. The sample size was relatively small, limiting the generalizability of the results. Moreover, the study was conducted in a single school, which may not represent diverse educational contexts across Indonesia. Future research could explore the application of the “Magic Box” media in different regions and age groups to validate its broader applicability.

5. Results and discussion

5.1. Initial Conditions of Reading Instruction

Observations conducted at SDN 2 Tilongkabila revealed significant challenges in reading instruction among second-grade students. The primary instructional material consisted of textbooks provided by the school, which were largely ineffective in engaging students. Teachers faced constraints in developing alternative teaching strategies due to limited time and resources, relying heavily on traditional methods that lacked interactivity and visual appeal. Consequently, students displayed low motivation and struggled with basic reading tasks, such as decoding syllables and constructing

coherent sentences. This aligns with findings by Hasanah & Nurhasanah (2018), who noted that inadequate instructional media often results in diminished learning outcomes.

The absence of dynamic and visually engaging teaching aids was a critical gap in the existing instructional framework. Students exhibited difficulty in transitioning from recognizing letters to reading complete sentences, often reading in a fragmented and hesitant manner. Moreover, limited parental involvement and infrequent reading practice at home further exacerbated these challenges. This observation underscores the importance of introducing innovative teaching tools tailored to the developmental needs of young learners, as suggested by Rejeki et al. (2020).

5.2. Development and Validation of the Magic Box Media

The development of the "Magic Box" media followed the systematic stages of the ADDIE model. This ensured a thorough analysis of students' needs, a well-designed prototype, and iterative revisions based on expert feedback. The media was validated by three experts specializing in instructional material, media design, and language.

- **Content Validation:** Experts assessed the alignment of the media's content with the curriculum and its potential to address the identified learning challenges. The media achieved an average score of 90%, indicating strong alignment with educational objectives. Feedback highlighted the relevance of the materials and their ability to foster active engagement in reading activities.
- **Design Validation:** The visual and interactive elements of the "Magic Box" were evaluated for their appeal and functionality. The media received a score of 92%, categorized as "highly practical." Experts noted that the use of vibrant colors, interactive features, and culturally relevant illustrations enhanced its potential to captivate students' attention and sustain their interest.
- **Language Validation:** The linguistic components of the "Magic Box," including instructions and reading prompts, were assessed for clarity and appropriateness. The media achieved a score of 91%, reflecting its suitability for second-grade students. Suggestions for minor linguistic adjustments were incorporated into the final design.

These validation results align with prior studies, such as those by Sulistyowati et al. (2023), which demonstrated the efficacy of interactive media in improving students' engagement and comprehension in elementary education.

5.3. Implementation and Practicality Testing

The implementation phase involved testing the "Magic Box" in small- and large-scale settings.

- **Small-Scale Testing:** Conducted with eight students, this phase served as an initial trial to identify usability issues and gather preliminary feedback. Students demonstrated enthusiasm and active participation during reading activities, indicating the media's potential to enhance engagement. Feedback from this phase was used to refine the "Magic Box" before large-scale implementation.
- **Large-Scale Testing:** The refined media was tested with 22 students, focusing on its practicality and impact on reading performance. Students' responses were overwhelmingly positive, with a practicality score of 95%. Teachers observed noticeable improvements in students' motivation and willingness to engage with reading tasks.

These findings corroborate the results of Disurya et al. (2024), who reported similar increases in student engagement and performance when using interactive teaching aids in elementary classrooms.

5.4. Effectiveness Testing

The effectiveness of the "Magic Box" was assessed through pre- and post-tests measuring students' reading skills. The tests focused on three key areas: decoding, fluency, and comprehension.

- **Decoding:** Students exhibited significant improvements in their ability to decode syllables and construct words. The average decoding accuracy increased from 60% in the pre-test to 85% in the post-test.
- **Fluency:** Reading fluency, measured in terms of words read correctly per minute, also showed notable gains, with average scores rising from 45 to 70 words per minute.
- **Comprehension:** Comprehension scores improved from an average of 50% to 80%, indicating better understanding of the text.

These improvements align with the findings of Zuchdi & Nurhadi (2019), who highlighted the effectiveness of tactile and interactive media in supporting foundational reading skills among primary students.

6. Discussion of Findings

The results of this study underscore the potential of the “Magic Box” as a transformative instructional tool for reading instruction in primary education. By integrating visual, tactile, and interactive elements, the media addresses multiple dimensions of learning, fostering active engagement and improving reading skills.

- **Engagement and Motivation:** The “Magic Box” succeeded in capturing students’ attention and sustaining their interest throughout the learning process. This finding aligns with constructivist learning theories, which emphasize the importance of engaging students in hands-on activities to construct knowledge actively (Piaget, 1952).
- **Skill Development:** The media’s structured approach to reading tasks—ranging from letter recognition to sentence construction—allowed students to progress systematically. This scaffolded learning approach is consistent with the principles of the ADDIE model, which advocates for a stepwise enhancement of instructional tools based on learners’ needs (Dick & Carey, 2005).
- **Contextual Relevance:** The inclusion of culturally relevant illustrations and narratives in the “Magic Box” enhanced students’ connection to the material. This aligns with Khusna et al. (2024), who emphasized the importance of contextual learning tools in fostering meaningful engagement.
- **Teacher Support:** Teachers reported that the “Magic Box” simplified the instructional process by providing a ready-to-use, engaging medium that complemented their teaching strategies. This highlights the dual benefits of the media: enhancing student learning while alleviating the instructional burden on teachers.

Limitations and Future Directions

While the findings are promising, the study is not without limitations. The sample size was relatively small, and the research was confined to a single school, limiting the generalizability of the results. Additionally, the study focused exclusively on reading skills, leaving other aspects of language development, such as writing and speaking, unexplored.

Future research could address these limitations by:

- Expanding the study to include a larger and more diverse sample across different regions.
- Exploring the application of the “Magic Box” to other aspects of language learning, such as vocabulary development and storytelling.
- Investigating the long-term impact of the media on students’ academic performance and motivation.

7. Conclusion

This study highlights the effectiveness of the “Magic Box” as an innovative instructional tool in improving reading skills among second-grade students at SDN 2 Tilongkabila. The media demonstrated high levels of validity (90%-92%), practicality (95%-97%), and effectiveness, with significant improvements in decoding, fluency, and comprehension skills as evidenced by pre- and post-test results. These findings underscore the value of integrating interactive and tactile media in reading instruction, fostering student engagement and motivation while addressing foundational reading challenges.

The inclusion of vibrant visuals, contextual narratives, and interactive elements aligns with constructivist learning principles, enabling students to actively engage with and internalize reading concepts. Moreover, the tool provided teachers with a ready-to-use, visually appealing medium that complemented traditional teaching strategies, thereby simplifying the instructional process.

This study contributes to the growing body of literature advocating for innovative media in primary education, particularly in linguistically diverse and resource-constrained settings. While promising, the study’s findings are limited by its small sample size and focus on a single school. Future research should explore the long-term impacts of the “Magic Box,” its application in broader educational contexts, and its adaptability to other aspects of language learning, such as writing and speaking, to further enrich literacy education.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

- [1] Ariska, S., & Suyadi. (2020). Magic Box: A Tool for Enhancing Student Engagement in Elementary Learning. *Educational Innovations Journal*, 12(3), 45-56.
- [2] Gerlach, V. S., & Ely, D. P. (1971). *Teaching and Media: A Systematic Approach*. New York: Prentice-Hall.
- [3] Hasanah, & Nurhasanah. (2018). Improving Early Reading Skills Through Interactive Media. *Journal of Elementary Education*, 10(2), 123-135.
- [4] Khusna, N., et al. (2024). The Role of Contextual Media in Enhancing Reading Skills. *Primary Education Review*, 15(1), 67-75.
- [5] Kustandi, C. (2020). *Innovative Media in Educational Practices*. Jakarta: Gramedia.
- [6] Musfigon, H. (2012). Media as an Educational Tool: Theories and Applications. *Educational Development Journal*, 5(1), 33-45.
- [7] Piaget, J. (1952). *The Origins of Intelligence in Children*. New York: International Universities Press.
- [8] Ramdani, M. (2021). Constructivist Approaches in Early Literacy Education. *Language and Learning Journal*, 8(4), 75-89.
- [9] Rejeki, E., et al. (2020). The Role of Interactive Media in Improving Early Literacy Skills. *Educational Research and Development*, 9(3), 101-112.
- [10] Sulistyowati, N., et al. (2023). The Use of Magic Box in Narrative Reading for Fifth Grade Students. *Journal of Pedagogical Innovations*, 14(2), 88-99.
- [11] Wulandari, N. D., et al. (2023). Enhancing Learning Outcomes Through Media Integration. *Journal of Educational Methods*, 11(4), 199-212.
- [12] Zuchdi, D., & Nurhadi. (2019). The Relevance of Interactive Learning Tools for Early Grades. *Journal of Elementary Pedagogy*, 7(1), 58-65.