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Redesigning Gambar Lucu Mika Book to Enhance Digital Literacy Competencies

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ABSTRACT:
The increasing exposure of children to digital environments necessitates integrating digital literacy into educational materials. However, the Gambar Lucu Mika book, designed for early literacy development, lacks essential elements of digital safety, prompting the need for content redesign. This study aims to enhance the book by incorporating digital safety concepts aligned with the pillars of digital literacy: Digital Skill, Digital Ethics, Digital Culture, and Digital Safety. A research and development approach were employed, involving an initial content analysis, expert validation, and iterative revisions. Data were collected through document review and expert evaluation, analyzed descriptively and qualitatively.The redesigned textbook introduces interactive scenarios, guided activities, and quizzes to teach these concepts effectively. Expert validation confirmed that the new design is relevant, practical, and feasible for elementary school use. The study concludes that integrating Digital Safety into educational materials is essential for equipping young learners with critical online security skills. This research contributes to the development of more comprehensive learning resources and offers a replicable framework for integrating digital literacy into primary educationrds.

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1. Introduction

The rapid advancement of digital technology has fundamentally reshaped how individuals access, share, and create information, making digital literacy a vital skill in today's world. Children, as active digital users, face numerous opportunities and risks online, highlighting the critical need for early digital literacy education. Furthermore, data from the Demografi Peserta Sektor Pendidikan (2023) shows that there are over 350,000 elementary school students in Indonesia who would benefit from digital literacy education, including crucial aspects of digital safety.

According to the Indonesian Ministry of Communication and Information (Komdigi), digital literacy is structured around four essential pillars: Digital Skill, Digital Ethics, Digital Safety, and Digital Culture. These pillars aim to equip students with the knowledge and abilities to navigate the digital world responsibly and securely. However, research indicates that while many learning materials incorporate Digital Skill, Ethics, and Culture, Digital Safety, particularly in terms of securing personal data and devices, is often neglected. This neglect is concerning, as recent data from the Statistik Aplikasi Informatika by KOMDIGI (2023) highlights a major issue: most of the Indonesian public does not yet view personal data as a fundamental human right that must be protected. Consequently, many individuals unknowingly share sensitive information, including personal data, without proper safeguards. According to cybersecurity company Surfshark, Indonesia ranks 21st globally for the highest number of

data breaches, with 13.90 million cases of data breaches recorded in 2023 alone. This underscores the urgency of incorporating digital safety education in early learning materials.

Educational media, such as textbooks and storybooks, are powerful tools for embedding digital literacy concepts. The Mica Funny Picture Book, published by the Ministry of Education and Culture, introduces children to emoticons and basic online interactions but lacks content on digital safety. This gap demonstrates the need for revision to ensure that young learners are equipped with the knowledge to protect themselves in the digital world. Theories related to Constructivist Theory (Piaget & Vygotsky), he alignment of educational content with learners' needs and societal challenges allows students to construct meaningful connections between new information and their existing knowledge. This approach makes learning more relevant and encourages critical thinking.

Despite these findings, a review of existing literature reveals limited studies focusing on practical implementations of digital safety in elementary learning materials. For example, while Pratama & Nugraha (2022) examined digital ethics integration in textbooks, digital safety was often treated as a secondary concern. Research on digital literacy in primary education has grown significantly in recent years. Studies such as Raharjo (2021) and Apriliana et al. (2022) highlight the necessity of integrating all four digital literacy pillars into the curriculum, emphasizing the importance of early exposure to digital safety practices. Suhartono (2021) explains that teaching materials must be designed to meet the needs and characteristics of students and utilize technological developments Furthermore, Mulyadi et al. (2020) and Handayani (2022) stress the role of contextualized and interactive materials in improving students' engagement and understanding of digital competencies. The present study builds on these insights by proposing a structured approach to incorporating digital safety concepts into the Gambar Lucu Mika textbook through validated design improvements.

This study, therefore, aims to redesign the Mica Funny Picture Book by integrating digital safety concepts, ultimately creating a more comprehensive resource for digital literacy in elementary education. The primary purpose of this study is to enhance the educational content of Gambar Lucu Mika by integrating the pillar of Digital Safety, thus ensuring a more comprehensive representation of digital literacy. The study seeks to answer the following questions:

1) What does the existing Gambar Lucu Mika textbook align with the four pillars of digital literacy?
2) How can Digital Safety be effectively integrated into the textbook through content design?
3) What is the validity and feasibility of the redesigned textbook in addressing digital literacy for elementary school students?

By addressing these questions, this study contributes to bridging the gap between digital literacy policy goals and practical classroom applications, providing a valuable resource for educators and policymakers alike.

2. Method

This study used the first level Research and Development (R&D) method based on Sugiyono's (2017) theory. The aim was to develop a book design of Gambar Lucu Mika by integrating aspects of digital literacy, especially on the Digital Safety pillar, to increase the relevance of the material to the digital literacy needs of elementary school students.

This research was designed in the following stages:

1) Preliminary Study Stage

The development of effective teaching materials is very important in supporting learning that is relevant to the needs of the times, especially in the context of digital literacy. This study employs the Research and Development (R&D) method, specifically following Level 1 of Sugiyono's R&D model. R&D is used in this study to design, develop, and validate the content of the Gambar Lucu Mika textbook, particularly its integration of digital safety components. The goal is to create an improved version of the textbook that aligns with the pillars of digital literacy, with a focus on enhancing digital safety awareness in primary education. The design process includes needs analysis,

content development, and validation by experts to ensure the materials' feasibility, relevance, and effectiveness in addressing the learning needs of students.

2) Design Development Stage

Based on the results of the analysis, the development design was formulated with the following steps: (1) Develop new learning indicators for the Digital Safety pillar. (2) Conceptualizing additional stories, interactive activities, and educational illustrations relevant to the digital security theme. (3) Designing new elements in the book, such as guides for teachers and parents. The resulting design was validated by experts, including digital literacy experts to evaluate the suitability of the material to assess the suitability with the learning needs of elementary school students.

Subjects and Objects of Research

The research subject of this study is the Gambar Lucu Mika, which is a learning resource published by the Ministry of Education and Culture. The research object focuses on the learning materials within the book that are aligned with the pillars of digital literacy, with particular emphasis on Digital Safety. This includes identifying how the book addresses aspects of digital safety, such as the importance of securing devices, protecting personal data, and educating students about the risks and threats present in the digital world. The study aims to evaluate how well these concepts are integrated into the book's content and explores potential improvements for enhancing digital safety awareness among young learners.

Techniques in Data Collection and Analysis

1) Literature Study

This study employs the Research and Development (R&D) method, specifically following Level 1 of Sugiyono's R&D model. R&D is used in this study to design, develop, and validate the content of the Gambar Lucu Mika textbook, particularly its integration of digital safety components. The goal is to create an improved version of the textbook that aligns with the pillars of digital literacy, with a focus on enhancing digital safety awareness in primary education. The design process includes needs analysis, content development, and validation by experts to ensure the materials' feasibility, relevance, and effectiveness in addressing the learning needs of students.

2) Data Analysis Technique

The data were analyzed descriptively qualitatively to evaluate the findings from the initial book analysis and the design validation process. The initial analysis of the Gambar Lucu Mika revealed that while the book effectively introduced children to several pillars of digital literacy, particularly digital skill, digital ethics, and digital culture, it lacked coverage on digital safety. The book provided insights into emoticons, their use in social media, and basic digital interactions but failed to address key digital safety concepts such as device security, password creation, and screen-locking to protect personal data. This identified gap highlighted the need to revise the book to better integrate the pillar of digital safety, ensuring that students also develop skills to protect themselves in the digital world.

3. Result

To facilitate understanding and reading, the results of the research are described first and then followed by discussion. The result subtitles and discussion subtitles are presented separately. This section should be the most part, at least 60% of the entire body of the article.

This research resulted in the development of a Gambar Lucu Mika design that integrates the pillars of digital literacy, particularly Digital Safety, which had not previously been covered in the original book. The research results are summarized in the following three stages:

1) Content Analysis of Gambar Lucu Mika Book

The results of the analysis with NVivo software of the Gambar Lucu Mika book showed that the book had covered three of the four pillars of digital literacy:

a. Digital Skill:

The book introduces students to the concept of emoticons, their use in social media, and the ability to access digital books through the Ministry of Education's official website.

b. Digital Ethics:

The book provides ethical guidelines, such as asking permission before using someone else's device and avoiding sending messages or emoticons carelessly.

c. Digital Culture:

Books suggest appropriate ways of communicating so as not to offend others.

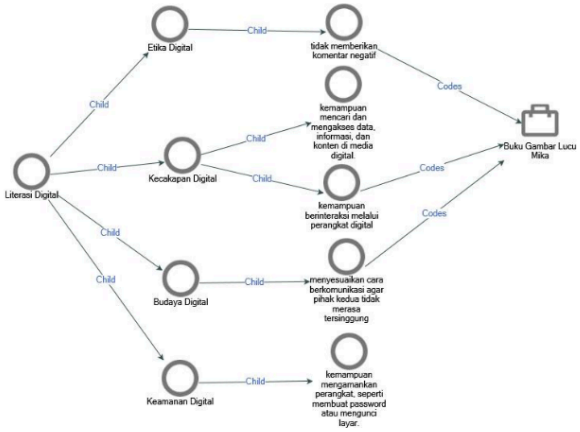

Figure 1. results of the analysis with NVivo software

However, Digital Safety was not found as an explicit element in the book, although there is potential to include it, such as through the introduction of digital device security features (passwords and screen lock).

2) Development Design Validation

The book development design covering the Digital Safety pillar was validated by two groups of experts: digital literacy and education. The validation results showed that the design met the following criteria:

a. Appropriateness of Materials: Additional designs, such as new stories, interactive activities, and practical guides, were considered relevant to the digital literacy needs of elementary school students.
b. Feasibility of Use: Experts stated that the design could be implemented in learning with minor revisions related to simplifying the activities for early childhood.

3) Revision and Final Prototype

Based on the validation results, the book design was developed into a prototype that included:

a. New Story:

Additional scenes about the older brother learning to secure digital devices by creating passwords and locking the screen.

b. Interactive Activities:

Practice creating secure passwords, digital security quizzes, and device security simulations.

c. Teacher and Parent Guide:

Practical advice to support students in understanding digital security concepts examples.

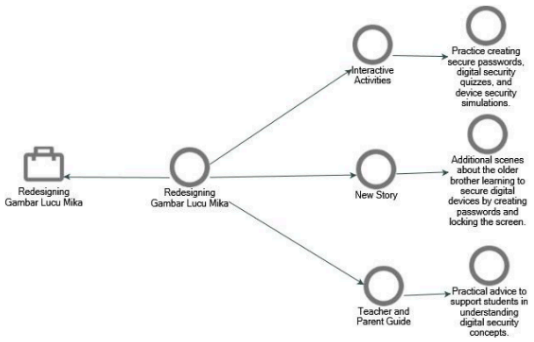

Figure 2. results of the analysis with NVivo software

4. Discussion

This research shows that the integration of digital literacy in textbooks has great potential to strengthen students' ability to face the digital era. This is in line with the Digital Literacy Theory (KOMDIGI, 2023) which emphasizes the importance of mastering basic skills, ethics, culture and digital safety. In addition, Technology-Based Learning Theory (Kozma, 2003) also states that technology can improve learning outcomes and prepare students to face digital challenges. The development design of the "Gambar Lucu Mika" book reinforces the digital safety aspect, complementing the other three pillars that have been covered previously. The introduction of simple steps such as creating passwords and locking the screen is crucial as it helps students understand how to protect devices from unauthorized use. This is in line with Constructivism Theory (Vygotsky, 1978) which emphasizes the importance of experience and social interaction in the learning process. In addition, Contextual Learning Theory (Brown et al., 1989) also states that effective learning should be related to real context and applicability.

The integration of digital safety into textbooks expands the scope of digital-based education. Children at an early age not only learn technical aspects, but also apply the values of responsibility and caution. This is in line with the Cognitive Development Theory (Piaget, 1954) which explains that children need experiences and interactions to develop cognitive abilities and digital literacy. In addition, Project Based Learning Theory (Thomas, 2000) also states that learning that focuses on real projects can improve motivation and learning outcomes. Although the book design is valid and feasible, implementation challenges include:

1. Availability of digital facilities: not all students have devices to practice digital security. This is related to the Diffusion of Innovations Theory (Rogers, 2003) which explains the factors that influence the adoption of new technologies.
2. Teacher competence: teachers need to be equipped with digital literacy knowledge to guide students in using supplementary teaching materials. This is in line with Organizational Learning Theory (Senge, 1990) which emphasizes the importance of developing competencies and organizational capacity to deal with change.

5. Conclusion

The urgency of digital safety awareness among elementary school students, this study aimed to address the knowledge gap by integrating digital literacy, particularly the digital safety pillar, into learning materials. The content analysis of "Gambar Lucu Mika" using NVivo revealed that while the book adequately covers digital skills, ethics and culture, it lacks digital safety content. To bridge this gap, this research developed and validated an enhanced design incorporating essential digital safety concepts, such as secure password creation, device locking and understanding online risks. The findings contribute to the existing body of knowledge on digital literacy by providing a practical and age-appropriate framework for enhancing students' comprehension of digital safety.

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