

Need analysis of story-based card media for GASING literacy-numeracy learning

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Abstract

This study aims to analyze the need for developing story-based card media as an innovative instructional medium at the concrete stage of the GASING (Easy, Fun, and Enjoyable) method in literacy and numeracy learning at the elementary school level. The study employed a qualitative approach within the framework of Design-Based Research (DBR), specifically focusing on the needs analysis stage as the foundation for subsequent media development. Data were collected through classroom observations, structured interviews with two classroom teachers and the school principal, as well as questionnaires distributed to 30 fourth-grade students at SD Negeri Girian Indah, Bitung City. The collected data were analyzed using thematic analysis techniques, including data reduction, data presentation, interpretation, and conclusion drawing. The findings revealed that the concrete learning media currently used in the GASING method are still limited to conventional number cards that emphasize procedural numeracy skills and lack contextual narrative elements. As a result, learning activities have not optimally integrated literacy skills, particularly reading comprehension and contextual understanding. Both teachers and students expressed the need for innovative learning media that combine numeracy concepts with engaging and meaningful stories to improve student motivation, participation, and conceptual understanding. Furthermore, story-based card media are considered capable of creating a more interactive, enjoyable, and student-centered learning environment. Therefore, the development of story-based card media is regarded as a strategic and relevant innovation to strengthen the implementation and effectiveness of the GASING method in improving literacy and numeracy competencies in elementary schools.

Keywords: needs analysis; story-based card media; literacy; numeracy; GASING method

INTRODUCTION

Literacy and numeracy learning in elementary schools still faces challenges in the form of low levels of meaningful and integrated conceptual understanding, particularly in linking reading skills with numerical reasoning. Learning practices that remain predominantly abstract and lack concrete media cause students to experience difficulties in constructing conceptual understanding in accordance with their developmental characteristics. Storytelling ability is one of the speaking competencies that students are expected to achieve in learning activities (Marlina, E., Apriliya, S., & Hamdu, G., 2018). Theoretically, elementary school students are at the concrete operational stage and therefore require visual and manipulative learning experiences (Jean Piaget, 1970). Learning that does not connect new concepts with students' prior knowledge has the potential to hinder the

formation of meaning (David Ausubel, 1968). In addition, the presentation of concepts that does not pass through the stages of enactive, iconic, and symbolic representation may weaken knowledge construction (Jerome Bruner, 1966). In the context of modern learning, the integration of text, images, and narratives has been shown to enhance information processing and learning retention (Richard Mayer, 2009). From a social constructivist perspective, interaction and scaffolding through story-based activities support learning within students' zones of proximal development (Lev Vygotsky, 1978). In line with policies on strengthening literacy and numeracy in the Merdeka Curriculum (Ministry of Education and Culture of the Republic of Indonesia, 2017; Ministry of Education, Culture, Research, and Technology, 2022), the GASING method has great potential; however, it still requires integrated

and contextual media support, such as story-based card media.

In this context, the GASING method emerges as an innovative approach that is expected to make a significant contribution to improving students' literacy and numeracy understanding and skills. The GASING method is a method used in mathematics learning with the aim of making it easier for students during the learning process so that they can master mathematics in an easy, fun, and enjoyable way. Furthermore, Surya (2013) states that the GASING method is a learning method developed by Prof. Yohanes Surya, Ph.D., from the Surya Institute, Indonesia. GASING is an acronym for *gampang* (easy), *asyik* (fun), and *menyenangkan* (enjoyable) (Shanty & Wijaya, 2012). *Easy* refers to the use of simple mathematical logic that is easy to remember and learn; *fun* is interpreted as a voluntary desire to learn without coercion; and *enjoyable* is understood as a sense of satisfaction in the mathematics learning process, which is carried out using various learning media such as manipulatives and games. Tang and Rafiqah (2015), Armianti (2016), Putra and Artawan (2015), as well as Wiyanti and Wakhyuningsih (2013) add that the GASING method is a way of learning mathematics that is carried out step by step, leading to learning outcomes that emphasize conceptual mastery while minimizing the use of complex formulas, and is taught in an easy, fun, and enjoyable manner. The GASING method has been shown to improve students' literacy and numeracy. Research findings indicate an increase in students' understanding of mathematical concepts and their application in daily life (Astuti, 2024). Other studies have examined the effect of the GASING method on elementary school students' multiplication calculation skills (Rara, S., 2025), as well as efforts to improve reading literacy and numeracy literacy through GASING-themed activities (Siahaan et al., 2023).

Previous studies indicate that the GASING method is effective in improving numeracy skills, mathematical conceptual understanding, and learning motivation among elementary school students. On the other hand, various studies also report that card media and story-based learning are able to enhance student engagement, memory,

and literacy skills through visual and narrative approaches. These findings are consistent with the theory of learning representations (Bruner, 1966) and multimedia learning theory (Mayer, 2009). However, observations of several GASING training videos show that many students still experience difficulties in conceptual understanding when using the GASING method, which in turn leads to difficulties in both literacy and numeracy, especially at the concrete stage, which remains less innovative. Low literacy and numeracy abilities often influence each other, as students who struggle with reading and text comprehension also tend to experience difficulties in understanding mathematical problems that require contextual comprehension. This condition is caused by several factors, including internal and external factors. Internal factors include limited teacher exploration in providing varied approaches to reading comprehension learning, while external factors include inadequate facilities and infrastructure, limited support from various stakeholders, and low student motivation to learn (Rahayu, T. E., Apriliya, S., & Saputra, E. R., 2023). Based on a review of previous studies, there is a research gap in the form of the absence of a comprehensive needs analysis related to story-based card media specifically designed to support the implementation of the GASING method in literacy and numeracy learning in elementary schools. Previous research has largely focused on measuring the effectiveness of methods or media, while the actual needs of users related to media characteristics, story content, literacy-numeracy integration, and alignment with students' cognitive developmental stages have not been systematically examined. This gap forms the basis for the importance of conducting this study. Therefore, it is essential to analyze the need for card media in literacy and numeracy learning in elementary schools in order to develop story-based card media that can effectively support students' literacy and numeracy learning at the elementary level.

The novelty of this study lies in the development of story-based card media that integratively combines reading literacy and numeracy skills within the implementation of the GASING method at the concrete stage of

elementary school learning. Unlike conventional GASING media, which generally focus only on procedural numeracy exercises using simple number cards, the media developed in this study incorporates contextual narrative elements designed in accordance with the cognitive developmental characteristics of elementary school students at the concrete operational stage.

The integration of stories into the card media functions not only as a visual aid but also as a means of fostering conceptual understanding, improving reading comprehension skills, and connecting mathematical concepts with students' real-life experiences. Furthermore, this study offers an innovative approach by integrating Bruner's representation theory, Vygotsky's constructivist theory, and Mayer's multimedia learning theory into a single design of concrete GASING-based instructional media that has rarely been explored in previous studies. Therefore, this research not only produces an innovative learning medium but also expands the implementation of the GASING method from being predominantly numeracy-oriented toward a more integrative, contextual, and student-centered literacy-numeracy learning approach.

LITERATURE REVIEW

Within the scope of primary education, literacy is a functional and multidimensional competence that is crucial for enhancing knowledge, critical thinking, and problem-solving. The concept of literacy has shifted from merely conventional reading and writing skills into an integrated language competence (reading, writing, speaking, and listening) that is functional in understanding, processing, evaluating, and using information critically to construct meaning (Apriliya, 2012; OECD, 2019). As a social practice that develops in accordance with cultural and educational contexts (Street, 2003), effective literacy involves high-level cognitive processes such as drawing inferences and reflecting on various forms of visual and multimodal texts (Duke & Pearson, 2002; Kress, 2010). Through this literacy experience, individuals are empowered to broaden their horizons and improve their quality of life holistically (UNESCO, 2006;

Yunita & Apriliya, 2022). Therefore, learning in primary schools must develop this literacy skill contextually and integratively with other subjects (Apriliya, 2017).

In line with literacy skills, numeracy is defined as the ability to understand, use, and communicate mathematical concepts encountered to make decisions in the challenges of everyday life (Fachrudin, 2022). Numeracy competence does not merely focus on procedural counting skills or the execution of basic arithmetic operations (addition, subtraction, multiplication, and division), but rather encompasses the ability to read, analyze, and interpret quantitative information presented in the form of symbols, tables, graphs, diagrams, or statistical data (Arofa, 2022; Baharrudin et al., 2021; Khasanah & Putri, 2021). The development of these mathematical skills must be designed based on real-world contexts to be relevant to all aspects of students' lives (Astutik, 2022). Through the integration of word problems, primary school students are not only trained to use mathematical logic skills but are simultaneously required to construct a comprehensive and functional reading comprehension (Apriliya, 2024; Dantes & Handayani, 2021).

Meanwhile, teaching methods are defined as structured ways and strategies implemented by educators in the learning process so that students can absorb learning materials quickly and effectively, and are able to master curriculum competency goals (Tafsir, 1996; Djamarah, 2006). The application of varied methods serves as an instructional tool to present teaching materials innovatively according to the teacher's capability (Aqib & Murtadlo, 2022). The use of appropriate teaching methods is highly crucial in bridging the delivery of material that requires direct student involvement, while simultaneously creating a pleasant learning atmosphere capable of consistently motivating student participation (Djamarah, 2006).

One relevant innovative mathematical approach is the GASING (Gampang, Asyik, dan Menyenangkan) method developed by Prof. Yohanes Surya, Ph. D. (Faizah, 2012; Surya, 2013). The main characteristic of this method is initiating the learning process from concrete

objects before moving toward abstract stages and mental calculation, aligning with the developmental phase of primary school students who are at the concrete operational stage (Faizi, 2012; Surya, 2013). Through structured numerical visualization and arithmetic logic, mathematics is taught gradually to minimize the use of complicated formulas and cultivate learning satisfaction without coercion (Armianti, 2016; Shanty & Wijaya, 2012; Wiyanti & Wakhyuningsih, 2013). The use of GASING has been proven to improve reading literacy as well as the application of daily mathematical concepts among students (Astuti, 2024; Siahaan et al., 2023). Nevertheless, the effectiveness of GASING highly depends on the variation of manipulative media used. Story-based numeracy learning is considered capable of reinforcing this method because narratives help construct real-world contexts, increase memory retention, and simultaneously train students' reading literacy.

The use of card media in the implementation of the GASING method offers a number of advantages, including concretizing abstract number concepts in accordance with logical understanding before symbolic representation (Surya, 2018). In addition, cards are able to encourage active participation through manipulative activities, reduce students' mathematical anxiety, and increase learning outcomes of basic arithmetic operations through meaningful repetition (Putri & Mulyono, 2020; Rahmawati et al., 2021; Wijaya & Surya, 2019). Card media is also practical and easy for teachers to develop in schools with limited facilities (Hidayat & Sari, 2022). However, card media also has limitations, such as the risk of becoming a mere game tool without conceptual reinforcement if poorly planned, limited representation for advanced mathematical concepts, the potential to decrease interest if it lacks variation, and requiring longer time management during exploration (Putri & Mulyono, 2020; Rahmawati et al., 2021; Wijaya & Surya, 2019). Therefore, careful planning and the utilization of innovative learning media are required so that the teaching and learning process runs more actively and clearly (Majid et al., 2021).

The urgency of developing story-based card media in GASING learning lies in its ability to provide contextual meaning to numbers and arithmetic operations. The absence of a narrative context often causes numeracy practice to get trapped in procedural mastery without everyday meaning. Through storyline visualization, students are helped to bridge concrete experiences with abstract concepts, which aligns with the concrete operational cognitive characteristics of primary school children. In addition to triggering emotional engagement and student focus when solving mathematical problems (Apriliya, 2024; Surya, 2010), stories on cards also train students to read and interpret textual information simultaneously. This innovation serves as an inclusive, sustainable, and easily developed solution for educators because it can be adapted to the local cultural context and the students' environment.

RESEARCH METHODS

This study employs a qualitative approach within the framework of Design-Based Research (DBR), following the model proposed by Thomas C. Reeves, with a specific focus on the needs analysis stage. DBR enables the contextual development of learning media through an iterative process that includes design, trial implementation, evaluation, and continuous refinement based on students' and teachers' responses. Qualitative research is defined as a research procedure that produces descriptive data in the form of written or spoken words from people and observable behaviors (Moleong, 2017). Qualitative research is also understood as research conducted in a natural setting with the purpose of interpreting occurring phenomena and involving various available methods (Anggito & Setiawan, 2018).

Through this approach, the study not only produces applicable instructional media for integrating literacy and numeracy, but also generates story-based GASING instructional design principles that can serve as references for mathematics teaching practices in primary schools (Reeves, T. C., 2006). The research subjects or data sources consist of the principal of SD Negeri Girian Indah, two fourth-grade teachers, and 30

fourth-grade students, comprising 15 male and 15 female students.

The selection of respondents in this study was conducted using purposive sampling, which involves deliberately selecting research subjects based on their relevance to the research focus (Sugiyono, 2019). In line with this, John W. Creswell explains that in qualitative research, researchers select participants who can provide the best understanding of the phenomenon under investigation (Creswell, J. W., 2013). The respondents include one school principal, two fourth-grade teachers responsible for literacy and numeracy instruction and experienced in applying the GASING method, and 30 fourth-grade students involved in the learning process. The principal was selected as a respondent due to his/her role as the school leader who has implemented mathematics learning using the GASING method since 2023. The teachers were selected because they were considered capable of providing rich and in-depth information regarding classroom learning experiences in grade IV, instructional media needs, and challenges encountered in developing students' literacy and numeracy, particularly related to the use of story-based card media. The selected students were fourth graders who had participated in mathematics learning using the GASING method and were therefore able to provide information regarding their conceptual understanding and their interest in story-based card media. The number of respondents was determined based on the principle of data saturation, that is, when the collected data became repetitive and no new significant meanings emerged.

Data collection techniques included in-depth interviews with the school principal, two fourth-grade teachers, and 30 fourth-grade students at SD Negeri Girian Indah; observation of mathematics learning videos using the GASING method; and documentation. The data were then analyzed using qualitative data analysis techniques, including data reduction, data display, and conclusion drawing. Data credibility was ensured through data triangulation by comparing and confirming findings from various data sources and collection techniques. Through these stages, the study is expected to produce a comprehensive

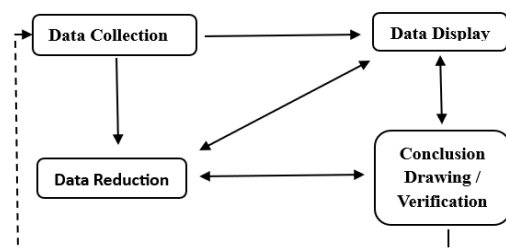
depiction of the needs analysis of story-based card media in literacy and numeracy learning at the primary school level. The data sources and question indicators are presented as follows.

Table 1
Data Source and Questions Indicators

No.	Data Source	Question Indicators
1.	Teachers	The process of literacy and numeracy learning using the GASING method in elementary school.
		The use of the GASING method in literacy and numeracy instruction in elementary school.
		Teachers' difficulties in implementing literacy and numeracy learning using the GASING method.
		The need for the development of the GASING method in literacy and numeracy learning at the elementary school level.
2.	Principal and students	Development of the GASING method in students' literacy and numeracy learning in elementary school.
		The suitability of the GASING method for literacy and numeracy learning in elementary school.

Data analysis employed a thematic approach, referring to the qualitative data analysis techniques proposed by Miles et al. (2014), which consist of data reduction, data display, and conclusion drawing/verification. In this qualitative study, data analysis began with data collection, followed by the selection and organization of relevant data. The process then continued with data presentation to facilitate interpretation, and concluded with drawing and verifying conclusions. More specifically, the analytical steps based on the framework proposed by Miles et al. (2014) were applied as follows.

Table 2
Data Analysis Framework



Based on the data analysis model proposed by Miles and Huberman as illustrated in the figure above, the process can be explained as follows. Data were collected through interviews, observations of instructional videos, and questionnaires. The next step was data condensation, which involved selecting and focusing relevant data. This was followed by data display, namely the process of organizing and

integrating the data. Finally, information was concluded to address the research problems through systematic data analysis. Conclusion drawing was carried out continuously from the initial stage of data collection and finalized at the end of the analysis based on all data obtained by the researcher.

To ensure the trustworthiness of the data, several validation techniques were employed. First, credibility testing was conducted through source triangulation, which involved cross-checking data obtained from multiple sources. In addition, reference materials were used to support the authenticity of the data, such as photographs and audio recordings. Furthermore, member checking was applied to ensure that the information presented in the research report was consistent with the perspectives and intentions of the data sources or informants (Makarische, 2020). Second, dependability, which in qualitative research is referred to as reliability, was examined to assess the quality of the research process. This involved reviewing whether the researcher had been sufficiently careful and whether any errors occurred in the conceptualization of the research design, data collection procedures, and data interpretation. Third, confirmability testing was conducted to ensure that the research findings could be considered objective and were supported by the data.

RESULTS AND DISCUSSION

a. Results / Research Findings

Table 3
Classroom Observation

Aspek yang Diamati	Field Findings	Implications
Learning Stages	Teachers implemented the concrete, abstract, and mental computation stages	The GASING method structure was implemented according to established procedures
Media at the Concrete Stage	Number cards were used without a narrative context	Learning remained procedural and lacked contextual meaning
Student Responses	Students were active during calculation activities but experienced difficulties with word problems	Reading literacy influenced numeracy comprehension

Table 4
Results of Teacher and Principal Interviews

Theme	Representative Quotation	Analysis
Literacy-Numeracy Connection	"Students who read slowly usually also have difficulty understanding word problems." (Teacher)	Reading literacy has a direct influence on numeracy achievement
Media Limitations	"So far, we have only used basic number cards without stories." (Teacher)	Concrete media have not yet supported a narrative context
Development Needs	"It would be better if there were media that combine stories with numbers." (Principal)	Story-based card media emerge as a potential solution

Table 5
Results of the Student Needs Questionnaire

Indicator	General Findings	Interpretation
Interest in Stories	More than 70% of students expressed interest in story-based learning	Stories increase students' motivation and attention
Concept Understanding	Students found it easier to understand concepts through illustrations and storylines	Narrative media support students' mental representation of concepts
Media Preferences	Students preferred colorful and illustrated cards	Contextual visualization is needed at the concrete stage

b. Discussion

Field findings indicate that teachers have implemented the concrete, abstract, and mental calculation stages in accordance with the structure of the GASING method. This suggests that procedurally, teachers have understood and correctly applied the learning sequence. These findings are consistent with the theory of learning progression from concrete to abstract, which states that conceptual understanding becomes stronger when learning begins with direct experiences before moving toward symbols and mental operations. Within the context of the GASING method, these stages are designed to help students build numeracy understanding gradually and naturally. However, although the stages have been implemented, the effectiveness of learning is highly dependent on the quality of the media used at each stage, particularly at the concrete stage.

Observational results show that the media used at the concrete stage were limited to number cards without a narrative context. This condition caused learning to remain procedural and not fully contextual. These findings can be explained through contextual learning theory, which

emphasizes that learning becomes more meaningful when instructional content is connected to real-life situations and students' everyday experiences. Number cards without stories only help students recognize symbols but do not sufficiently support conceptual meaning-making. Therefore, the use of story-based card media becomes essential so that the concrete stage not only presents visual objects but also provides context that helps students understand the meaning behind numbers and numeracy operations.

The findings also reveal that students appeared active and enthusiastic during calculation activities but experienced difficulties when confronted with word problems. This indicates that students' numeracy skills have not yet been fully integrated with their reading literacy skills. This finding aligns with numeracy literacy theory, which emphasizes that numeracy understanding depends not only on calculation skills but also on the ability to comprehend texts and problem contexts. From a constructivist perspective, students need to be supported in constructing understanding through learning experiences that integrate reading, story comprehension, and problem-solving. Story-based card media have the potential to bridge this gap by presenting numeracy problems in the form of simple narratives that are closely related to students' daily lives.

Interview findings indicate that students who experience difficulties in reading also tend to have difficulties understanding numeracy word problems. This reinforces the close relationship between reading literacy skills and numeracy achievement. These findings are consistent with numeracy literacy theory, which views numeracy not merely as the ability to perform calculations, but also as the ability to understand, interpret, and use mathematical information presented in textual form. From a cognitive development perspective, elementary school students still require language support to make sense of mathematical problems. This view aligns with Vygotsky's perspective, which emphasizes the role of language as a primary tool in thinking and learning processes. Consequently, numeracy instruction that is not

integrated with literacy may result in partial and mechanical understanding among students.

Further interview results reveal that the media commonly used in literacy and numeracy instruction remain limited to number cards without narrative context. This condition indicates that the concrete media currently employed do not fully support meaningful learning. These findings can be explained through cognitive development theory, which suggests that elementary school students are at the concrete operational stage and therefore require media that are not only visual but also contextual. Number cards without narratives may support symbol recognition, but they do not adequately facilitate meaning construction. This is consistent with Piaget's view that conceptual understanding is strengthened when students interact with meaningful concrete experiences. Thus, limitations in instructional media constitute one of the factors hindering the integration of literacy and numeracy in learning.

Interviews with the school principal indicate a clear need for instructional media that integrate stories with numbers as a solution for literacy and numeracy learning. This need reflects educators' awareness of the importance of media that can bridge students' reading and calculation abilities. From a constructivist perspective, effective learning occurs when students actively construct knowledge through meaningful experiences. Story-based card media allow students to construct numeracy understanding through narrative sequences that are closely related to their everyday lives. This approach is also consistent with contextual learning principles that emphasize the connection between instructional content and students' real-life experiences. Therefore, the development of story-based card media not only addresses practical needs in the field but also has a strong theoretical foundation for supporting integrated literacy and numeracy learning.

The questionnaire results indicate that more than 70% of students reported enjoying story-based learning. This finding suggests that stories have a strong appeal in enhancing students' motivation and attention during the learning process. Theoretically, this condition aligns with the view of Jerome Bruner (1986), who emphasized that narrative or storytelling is a

natural way for humans to understand the world and construct meaning. In instructional contexts, stories help students organize information in a coherent and meaningful manner, thereby increasing attention and learning engagement. Consequently, students' interest in stories strengthens the argument that story-based card media have strong potential as an effective tool for literacy and numeracy learning in elementary schools.

The questionnaire findings also reveal that students found it easier to understand concepts when learning was presented through illustrations and storylines. This indicates that narrative media support students in building mental representations of the concepts being learned. This finding is consistent with the cognitive development theory of Jean Piaget (1972), which states that elementary school students are at the concrete operational stage and therefore require visual support and real-life contexts to comprehend abstract concepts. Illustrations and stories function as a bridge between concrete experiences and symbolic understanding, making literacy and numeracy concepts more accessible. Therefore, story-based card media play an important role in helping students construct conceptual understanding in a gradual and meaningful way.

Furthermore, the questionnaire results show that students preferred colorful and illustrated card media over media consisting solely of text or numbers. This finding indicates that contextual visualization is highly needed by students, particularly at the concrete stage of learning. Theoretically, this result is in line with Allan Paivio's (1991) dual coding theory, which posits that information is more easily understood and remembered when presented through a combination of visual and verbal elements. Colorful and illustrated card media not only attract students' attention but also help strengthen memory and conceptual understanding. In the context of the GASING method, students' preference for visual media reinforces the importance of using story-based cards as concrete-stage media that integrate visual elements, language, and numeracy in a unified manner.

Conceptually, card media are a form of two-dimensional visual media that function to convey instructional messages concisely, concretely, and in an easily understandable way. Card media are characterized by simplicity of form, flexibility of use, and the ability to present focused information without overloading students' cognitive capacity (Azhar Arsyad, 2017). In line with this, Sadiman et al. (2014) emphasize that the use of card media in learning should consider visual clarity, message coherence, and alignment with learning objectives and learners' characteristics. In elementary school contexts, card media are highly relevant because they support students' needs for concrete and visual learning experiences.

Story-based card media in the GASING method possess distinctive characteristics, namely the integration of visual illustrations, simple narrative texts, and numeracy symbols arranged progressively from concrete to abstract representations. These characteristics are consistent with the principles of GASING learning, which emphasize logical and meaningful conceptual understanding through active student engagement. The strengths of card media lie in their ability to enhance students' attention, motivation, and participation, as well as to facilitate more active and enjoyable learning interactions. Nevertheless, card media also have limitations, including limited information space and reliance on teachers' instructional strategies in managing learning activities. Therefore, the development of story-based GASING card media through a Design-Based Research approach is essential, as it enables continuous reflection and refinement of the design, allowing the characteristics, principles, and strengths of card media to be optimized while minimizing their limitations in accordance with the needs of literacy and numeracy learning in elementary schools.

CONCLUSION

This study confirms that story-based card media constitute a form of instructional media needed to support the integration of literacy and numeracy within the GASING method in elementary schools. Through needs analysis and development grounded in a Design-Based

Research approach, story-based card media are positioned not merely as visual aids, but as pedagogical tools that connect mathematical concept understanding with narrative contexts closely related to students' learning experiences. Accordingly, story-based card media within the GASING method demonstrate strong relevance as a contextual, applicable, and student-engagement-oriented learning innovation, while also generating design principles that may serve as references for the development of mathematics instructional media at the elementary school level.

It is recommended that elementary school teachers utilize story-based card media within the GASING method as contextual learning media to integrate literacy and numeracy more meaningfully, by adjusting story design, visual elements, and levels of task difficulty to students' characteristics. Future researchers are encouraged to examine the effectiveness of story-based GASING card media at broader implementation stages and to develop them in digital formats or across different grade levels, thereby further strengthening the contribution of this research to improving the quality of mathematics learning in elementary schools.

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