

Analysis of Elementary School Students Reading Logs Through Interactive Media with Differentiated Tiered Content Literacy

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Abstract: The 2022 PISA results show that Indonesian students' reading skills are still low. One of the factors influencing this is reading habits, as seen from the availability of reading media, reading intensity, and the ability to reflect on the content of the reading material. The purpose of this study was to analyze the reading logs of second-grade students at State Elementary School 75 in West Pontianak District through the use of interactive media based on websites and Android applications that contain tiered literacy content. Tiered content is compiled based on the BSKAP book grading guidelines, ranging from simple texts to more complex texts according to students' reading abilities. The research method used a descriptive qualitative approach with data collection techniques using observation, documentation, and interviews. Data analysis used content analysis. The results of the study show that the integration of interactive media containing digital flipbooks, interactive quizzes, and reading logs makes it easier for students to navigate readings according to their reading ability levels. However, the frequency of reading among students is still low, with most reading only 1–2 times per month. The reading logs show that students have been able to identify the basic intrinsic elements of a story, while the moral messages written are still predominantly explicit and normative. Nevertheless, a number of students are beginning to show greater depth of reflection. These findings indicate that interactive literacy media with tiered content has the potential to support the process of reflection and the development of students' moral literacy, although its implementation is still influenced by limitations in devices, family support, and reading preferences.

Keywords: Reading Log; Tiered Content.

Introduction

The low reading duration of elementary school students remains a serious concern in the world of education. For example, a study shows that the average elementary school student spends only about 3.6 minutes per day reading informational texts, while most of their time is spent on non-reading activities (Duke, 2000). According to content analysis, third and fourth graders spend an average of only 16 minutes per day with informational texts in class. While this is higher than Duke's figure, it is still far from the ideal proportion recommended by educational standards such as Common Core (Braker-Walters, 2014). The quality of informational reading learning strategies is still low, with a focus on reading in the observed informational reading learning segment of only 27% for grade 1 and 41% for grade 2 (Quinn & Paulick, 2022). This indicates an increased focus on informational texts, but no specific daily duration is mentioned.

Reading literacy skills are the main foundation for academic success and the formation of critical thinking. Reading literacy can predict academic achievement in the realm of knowledge, although it does not always lead to skills (Banat & Pierewan, 2019). There is a positive and significant correlation between reading literacy and student achievement in Indonesian language lessons (Gomes et al., 2024). However, conditions in Indonesia still pose major challenges, as Indonesian students' reading skills in PISA 2022 remain low, with only 25% of students reaching the minimum level compared to the OECD average of 74%, and almost none reaching the proficient level (OECD, 2022). This condition indicates that most students have not yet mastered basic reading literacy skills.

In the digital age, interactive media has been proven to increase student motivation, understanding of material, and confidence through the use of creative and interactive media such as videos, stories, and digital games (Hariska et al., 2024). Interactive media has been proven to have a significant positive influence on increasing student motivation, understanding of material, and self-confidence, and has been proven effective in creating enjoyable, relevant, and meaningful learning for elementary school students (Hafizin et al., 2024). Measures such as increasing access to reading materials, contextual learning, teacher training, and the use of technology can improve students' literacy skills (Tauhid et al., 2025). There is evidence that interactive media significantly increases the interest of elementary school students in learning (Raudatul Saumi & Ari Suriani, 2025). In addition, the Merdeka Curriculum approach also emphasizes the importance of conducting learning in an interactive, inspiring, enjoyable, and challenging learning environment that motivates students to participate actively and provides sufficient space for initiative, creativity, and independence in accordance with students' talents, interests, and physical and psychological development (Wahyudin et al., 2024), making the integration of interactive media in literacy increasingly urgent. Thus, the urgency of utilizing interactive literacy media is

not only relevant to national policy but is also supported by theory and empirical evidence from various international and national educational studies.

The development of interactive literacy media has brought a new paradigm in reading and learning. In addition, the integration of the principle of content differentiation allows teachers to adjust the material according to the abilities and challenging activities for students (Tomlinson, 2014). International research even shows that personalized reading learning systems, such as Assessment to Instruction (A2i), can significantly improve literacy skills in early grade students (Connor, 2019). Thus, the interactive differentiation approach is relevant for adoption in Indonesia.

Although many studies discuss the effectiveness of interactive media and differentiation, in fact, not many have researched the application of reading logs as a tool for student reflection in the context of interactive literacy media in Indonesian elementary schools. In fact, reading logs not only document reading activities but also help students reflect on their literacy understanding and development (Fitzgerald & Shanahan, 2000). The use of reading logs has been proven to contribute significantly to improving students' reading skills and forming reading habits. Research results show an increase in reading comprehension scores after students consistently use reading logs, where students are better able to identify main ideas, expand their vocabulary, and develop text summarizing and analyzing skills (Heriyanto et al., 2025). In addition, reading logs also support the development of metacognitive skills, namely students' awareness in monitoring and reflecting on the reading process, thereby encouraging deeper understanding and the formation of independent and critical readers (Ekstam, 2018). However, other studies show that mandatory reading logs can reduce intrinsic motivation, especially when they are perceived as a controlling obligation, so an appropriate approach is needed to avoid reducing students' interest in reading (Pak & Weseley, 2012). In general, these findings confirm that reading logs have great potential as a pedagogical strategy to increase engagement, reading skills, and foster sustainable reading habits among students. Therefore, there is an urgent need to explore the integration of these three elements, namely interactive media, differentiation, and reading logs.

Global developments in education emphasize the importance of integrated digital media literacy. Integrating reading logs with digital media strengthens the function of record-keeping into a learning ecosystem that is richer in data, multimodal, and personalized. At the global level, the OECD 21st-Century Readers framework emphasizes that literacy in the digital age requires the ability to select, evaluate, and verify online information (OECD, 2021). Reading on the internet requires different strategies and training from print media, for example, in terms of goal setting, self-monitoring, and source evaluation (Coiro, 2011), as well as a teaching approach that needs to include explicit instruction in the process of decoding and deep reading and

the involvement of students and teachers with the world of words and stories (Wolf, 2018).

In line with this trend, Indonesia, through its independent curriculum policy, encourages deep learning practices that include pedagogical practices, learning partnerships, learning environments, and the use of digital technology, which are important components of the learning experience (Ginanto et al., 2025). This opens up opportunities for innovation in the use of interactive media and reflective recording, such as reading logs. Thus, it can be understood that the integration of reading logs with interactive media and differentiated content literacy is a potential strategy to increase student engagement, ability, and literacy reflection. Therefore, this study aims to explore the extent to which this practice can contribute significantly to the frequency and ability to write down the title, author, illustrator of the book; time; intrinsic elements such as characters and characterization, setting and time, and the message contained in the story content of elementary school students through the analysis of students' reading logs integrated into interactive media with differentiated content levels. The tiered content referred to is tiered books. Tiered books are books that contain text/image and language material that gradually increases in complexity from simple to more challenging reading (Badan Standar, Kurikulum, 2022).

In this study, graded content literacy is defined as the presentation of reading materials with systematically increasing levels of complexity, including language structure, text length, and depth of meaning. This approach is in line with the principle of differentiated instruction, which emphasizes the provision of materials according to students' learning readiness (Tomlinson, 2014). For second-grade students who are in the concrete operational stage, gradual text composition is necessary for understanding to develop from literal information to more complex interpretations (Ginsburg & Oppen, 2016). Graded content also functions as literacy scaffolding, as simple texts support basic understanding, while more challenging texts encourage the ability to connect experiences, interpret characters, and identify moral messages. Thus, graded literacy has a strong theoretical foundation in developing reflection through reading logs and early critical reading, especially in recognizing explicit information, understanding the relationships between story elements, and interpreting basic moral messages. The integration of this concept is an important foundation for the effectiveness of interactive media in facilitating the progressive development of student thinking.

This study offers a combination of reading logs, interactive literacy media, and tiered content differentiation strategies. In other words, this study not only focuses on measuring reading outcomes but also facilitates adaptive and reflective learning processes. Theoretically, it is hoped that the results of this study can enrich the literature on multiliteracy and differentiated learning. Practically, these findings are

expected to help elementary school teachers develop literacy learning strategies that are interesting, effective, and in line with national education policies.

Methods

This study used a descriptive qualitative approach with the aim of analyzing the reading logs of second-grade students at SD Negeri 75 Pontianak Barat Subdistrict, which were integrated with differentiated interactive literacy media with tiered content.

The intervention design in this study was developed through the integration of three main components: interactive media, graded content, and reading logs. The graded content was compiled with reference to the BSKAP Book Grading Guidelines and consisted of six levels (A–E), which differed in terms of text length, sentence structure complexity, and story depth. The determination of student levels is not based solely on age but on actual reading ability, which is identified by teachers through classroom observation.

Interactive media was developed in the form of a website (Google Sites) and an Android application, which serve as the main platform for presenting content. Each level has a submenu containing (1) a digital flipbook as reading material, (2) an interactive quiz to test comprehension, and (3) a reading log form for reflection notes. This third element is integrated into a single flow, allowing students to read, check their understanding, and write reflections without leaving the media page. This design is intended to make the intervention easy to replicate and standardized and to produce consistent learning process data.

The research was conducted after 28 research subjects simulated the use of these media with the guidance of teachers in the classroom. The main instruments used included student reading logs, which served as reflection notes after reading activities; interactive literacy media provided in accordance with the students' ability levels and learning needs; and analysis guidelines developed to examine the frequency of reading and the content of student reading logs.

Data collection was carried out using three main techniques. First, observation of students' abilities in exploring the features of interactive literacy media. Second, documentation in the form of collecting student reading log data during the period of September 2024. Third, simple interviews with students and parents aimed at obtaining clarification on the findings that emerged from the documentation and observation results. The data was analyzed using content analysis, which was carried out in several stages, namely data reduction to select relevant information and data categorization based on indicators of reading frequency and reading log content consisting of the title, author, illustrator, characters and characterization, setting and time, and the message contained in the story, as well as drawing interpretations that produced research findings. Data validity was maintained by applying source

triangulation, namely comparing and confirming data from reading logs, observation results, and interviews with students and parents who accompanied students in utilizing differentiated interactive literacy media with tiered content.

Results And Discussion

Interactive literacy media with differentiated tiered content developed based on a website (Google Site) and Android-based application includes a main menu and several submenus. The main page of the interactive literacy media website/application consists of an opening statement from the media developer and a display of the main menu of the interactive literacy media, which is differentiated by content level, namely the reader level, starting from early readers (0-7 years old) level A, early readers level B1 (6-8 years), level B2 (7-9 years), level B3 (8-10), level C intermediate readers (10-12 years), level D advanced readers (13-15 years), and level E proficient readers > 16 years) as shown in Figure 1 below.

Image 1. Main Menu Display



Book grading refers to the Regulation of the Head of the Education Standards, Curriculum, and Assessment Agency of the Ministry of Education, Culture, Research, and Technology - RI Number 030/P/2022 concerning Guidelines for Book Grading. However, age range is equivalent to grade level, not the main reference for book grading. The main reference remains reading ability. (Badan Standar, Kurikulum, 2022).

Each book level submenu contains a menu showing the title page of the book at that level, as shown in Figure 2 below.

Image 2. Page/Submenu Level A



The content found in the submenu/subpage of each book title consists of a flipbook, interactive quiz, and reading log form. The display of each book title submenu is as shown in the following image.

Image 3. Flipbook Display

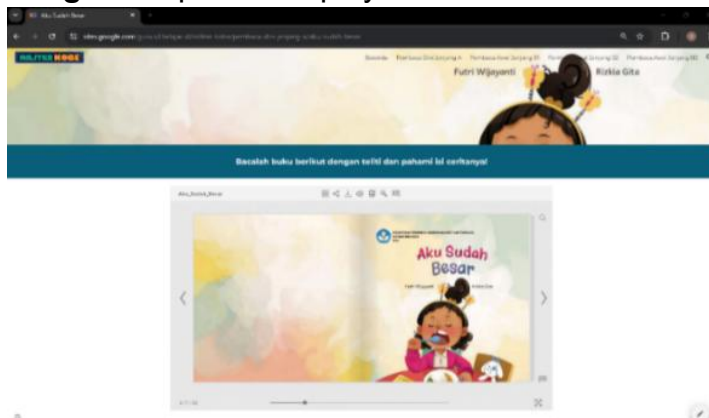


Image 4. Interactive Quiz Display (Quizizz)

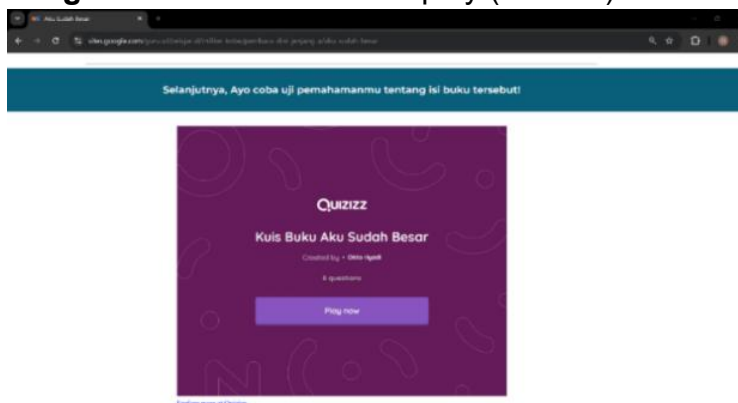
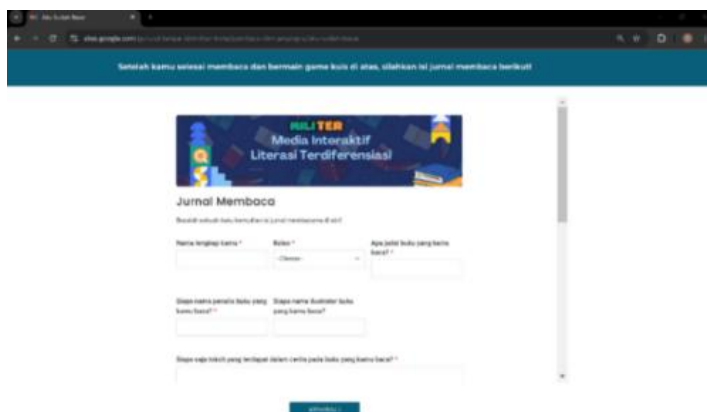


Image 5. Reading log form display



The three interactive media contents were created from different applications, namely flipbooks embedded from the <https://publuu.com> application, interactive quizzes embedded from the Quizizz application, and reading log forms embedded from Google Forms. The technique of embedding the three platforms in differentiated literacy interactive media with tiered content is a strategy to overcome the challenges students face in adapting to interactive media because when exploring the three contents, they do not need to exit the book title submenu. Through this interactive media, it is hoped that teachers can create a more personalized and meaningful learning experience for each student.

Table 1. Results of the Simulation Observation of Exploring Differentiated Content-Based Interactive Literacy Media

No	Aspect Observed	Number of Students	Percentage	Description
1	Ease of Access	25 students found it easy, 3 students found it somewhat difficult	89% found it easy	Difficulty due to not being familiar with using Chrome Books
2	Feature Navigation	21 students found it easy, 7 students needed guidance	75% found it easy	After guidance, all students were able to work independently
3	Clarity of Instructions	24 students understood, 4 students needed further explanation	86% understood	nstructions were clear, only minor repetition was needed
4	Interactivity	26 active students, 2 passive students	93% active	Interactive features (clicks, flipbooks, quizzes, and reading logs) ran smoothly and attracted students' interest

5	Appeal of Display	28 interested	students	100% interested	Picture-based displays and quiz games made students enthusiastic	story
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Based on observations of the use of differentiated interactive literacy media with tiered content by 28 students, data shows that most students found it easy to access the media. A total of 25 students (89%) were able to open the media smoothly, while 3 students experienced minor difficulties because they were not yet accustomed to using Chrome Books. In terms of feature navigation, 21 students (75%) were able to operate the menu easily, while 7 students needed guidance from the teacher at the initial stage. However, after receiving guidance, they were able to use the media independently.

In terms of clarity of instructions, 24 students (86%) understood the instructions in the media, while 4 students needed further explanation from the teacher to understand them better. The interactivity aspect showed excellent results, with 26 students (93%) actively trying out the available features and only 2 students tending to be passive. This indicates that the flipbook feature, interactive quizzes (Quizizz), and digital reading logs successfully increased student engagement in literacy activities.

Meanwhile, in terms of visual appeal, all students (100%) expressed interest and enthusiasm in using the media. The attractive visual design, supported by tiered content, provided a unique appeal for students, encouraging their interest in reading and exploring further. Overall, the observation results showed that this tiered content differentiated interactive literacy media was practical for students to use.

The results of the analysis of the reading logs sent by students through the Google form integrated into the interactive literacy media with differentiated tiered content can be classified according to the frequency of students' reading of books in one month as follows.

Table 2. Frequency of Reading Among Students

No	Frequency of Reading Books	Number of Students	%
1	Do not read	6	21,43
2	Read 1-2 times	11	39,29
3	Read 3-4 times	5	17,86
4	Read >4 times	6	21,43
Jumlah Subjek Penelitian		28	100

Based on this data, there were 6 students, or 21.43% of the 28 students who were the subjects of the study, who did not fill out the reading log. The researcher interviewed the students and their parents to find out the reasons or obstacles that prevented them from filling out the reading log. The interviews revealed several factors that hindered the students, namely not having their own devices, their parents working and therefore not having the time to accompany their children in accessing interactive literacy media,

and a lack of support from parents for their children to read books and fill out journals using these media.

The most frequent reading activity among students was reading and filling out reading logs 1-2 times per month, which was done by 11 students or 39.29%. This shows that these students were still not very interested in reading books through the interactive literacy media facilitated by the researcher. Interviews with this group revealed that the underlying reason was that they preferred reading printed books to digital flipbook-based reading materials. They also prefer to use their devices to play games and watch videos for entertainment.

The reading frequency categories of 3-4 times and more than 4 times had 5 students (17.86%) and 6 students (21.43%), respectively, as seen from the frequency of students filling out reading logs with book titles. The contents of the reading logs submitted by the students were then analyzed and described based on the reading log form items, which consisted of the book title, author, illustrator, characters and characterization, setting and time, and the moral message contained in the story.

The results of the reading log content analysis found that all students were able to find and write down the titles of the books they read, the authors and illustrators, and the characters in the stories they read accurately. The character descriptions were still general, such as good and bad characters. Similarly, the settings were still written in general terms, such as at home, on the street, at school, in the village, or in the garden. Meanwhile, the time written was also in the form of morning, afternoon, or night.

In general, the moral messages written by the students showed that they were able to grasp basic moral values such as independence, patience, togetherness, health, and environmental awareness. However, the quality of the moral messages was still dominated by simple, explicit, and normative messages. Only a small portion shows depth of reflection (such as appreciating small things, being grateful, or the importance of responsibility). Thus, the quality of the students' messages can be classified into three levels as shown in the following table:

Table 3. Quality of Student Story Messages

Quality Level	Students' Mandate	Characteristics
Basic (General, Normative)	- Study independently - Do not play with cell phones - Be patient in facing trials - Do not give up easily - Like eating carrots	Short, explicit, simple messages that are general advice without additional explanation.

Intermediate (Concrete, Contextual)	- Do not blow a flute while eating - Cheating is not fun - Many activities are disrupted during floods - Know how to grow plants - It is fun to climb mountains	The message is more tied to concrete events in the story; the situation and its connection to everyday life are clear.
Advanced (Reflective, More Meaningful)	- Waiting for something you want requires patience - Don't waste valuable things - Appreciate small things - Be diligent in being creative - We should learn from our mistakes	The moral message is more profound, showing a process of reflection, philosophical values, or a broader outlook on life.

The results of the analysis of the messages in the stories written by the students show that the quality of the messages varies in terms of theme, clarity, depth, and creativity. In terms of theme, students were able to express moral messages related to discipline, independence, patience, health, social life, and concern for the environment. This reflects that they are already able to relate stories to everyday experiences that are close to the world of children. In terms of clarity, most of the messages were written explicitly, simply, and easily understood, for example, “learn to be independent” or “be patient in facing trials.” However, there were still some messages that were unclear because they were only fragments of events, so they did not fully reflect a complete moral message. In terms of depth, most of the messages are still normative and general, but there are also some that are more reflective, such as “waiting for something you want requires patience” or “don't waste valuable things,” which show a more philosophical thinking about the value of life. Meanwhile, in terms of creativity, there is quite a noticeable variation. Some students were able to produce unique and contextual messages, such as “you should not blow a flute while eating,” while others still repeated common and frequently found moral messages.

The results of the study show that 6 students, or 21.43% of the 28 research subjects, did not fill out the reading log because they did not have personal devices, their parents had limited time to accompany them, and there was a lack of support from their families. These findings are in line with research findings stating that students' reading barriers are greatly influenced by external and internal factors related to family and parents (Dewi Nurhasanah Nasution et al., 2022) (Siti Adinda Hariyati, 2024). These include a lack of attention and support from parents in reading (Astia, 2020; Ilyas et al., 2022), as well as a lack of parental guidance at home (Windrawati et al., 2020). (Pujiarti et al., 2024). Parents' busy work schedules reduce the intensity of their

guidance and motivation towards their children, which has an impact on students' low interest in reading (Galuh et al., 2023). In addition, the majority of first- and second-grade students use their parents' smartphones (Suhendra et al., 2023). Limited access to devices and the cost of internet access are serious obstacles for students in accessing digital literacy-based learning media (Muthmainnah & Lestari, 2021). This confirms that the success of filling out reading logs is not only determined by student motivation but is also greatly influenced by parental support and the availability of adequate learning facilities.

The use of interactive media with differentiated content combined with the use of reading logs can provide a rich picture of the frequency of reading and the quality of reading log content, especially in terms of the moral understanding of second-grade elementary school students. The results of the study show that the majority of students (11 students; 39.29%) only read and fill out their journals 1-2 times a month, while those who read more frequently (3-4 times and >4 times) are 17.86% and 21.43%, respectively. This condition is in line with the findings of Duke (2000) and Quinn & Paulick (2022), which state that the duration of reading for elementary school children is still relatively low compared to the expected standard. In addition to the lack of parental support and opportunities to carry out routine activities of accompanying their children in reading stories/fairy tales, these findings also indicate low student engagement with flipbook-based digital literacy media facilitated by researchers. Similar conditions have been reported in several studies that found a strong preference for printed books over digital reading in terms of visual comfort and habit as important determinants of this preference (Dewi, 2022). Students' intrinsic motivation to read is also a factor in reading frequency, especially if reading logs are mandatory, which will affect a decline in students' interest in reading (Pak & Weseley, 2012). Therefore, the reading log strategy can be an effective reading habit if the goal of reading is set for pleasure (Madjdi et al., 2024). Another factor is that children spend more time playing with their gadgets than accessing reading materials (A'yun et al., 2021). These findings reinforce the results of the interviews in this study, which show that students prefer reading printed books to digital flipbook-based reading materials and prefer to use gadgets to play games and watch videos for entertainment.

Elementary school students have the ability to identify the intrinsic elements of a story (Santika et al., 2023). This finding is in line with the results of an analysis of the contents of students' reading logs, which shows that, in general, they are able to recognize and write down the basic intrinsic elements of the stories they read, including the title of the book, author, illustrator, characters, setting, and time period. This finding confirms that students have fairly good initial abilities in identifying the basic structure of a story. However, the character descriptions produced are still general in nature, as are the settings and time frames, which are generally written in a simple form without any specific details about the atmosphere or events. According

to Piaget (in Ginsburg & Oppen, 2016), elementary school-aged children are in the concrete operational stage, so it is natural that their understanding still tends to focus on things that are visible and general. This is reflected in the characterization, which is limited to distinguishing between good and bad characters, and in the setting description, which only mentions the house, school, or village without any details about the atmosphere. In the context of literacy, this achievement shows that students have only reached the stage of literal comprehension, which is the ability to understand information that is explicitly stated in the text (Clarke et al., 2013). They have not yet fully entered the level of interpretive comprehension, which requires the ability to interpret characters, atmosphere, and implied meaning.

The messages conveyed in the stories written by second-grade elementary school students varied in terms of theme, clarity, depth, and creativity, and the quality of their expression of moral messages or lessons was still normative, explicit, and simple. This variation reflects the development of children's moral literacy skills, which are still in the early stages but are already leading to an understanding of contextual life values. This finding is in line with research showing that Indonesian children's stories contain moral values such as responsibility, courage, hard work, honesty, and compassion, which can support language learning and character education in elementary schools (Sri Damayanti & Supriadin, 2024). In addition, the variation in the quality of the messages found can also be influenced by the students' abilities and the learning methods applied. However, improving students' understanding of the themes and messages of short stories can be achieved through homework assignments (Suprapti, 2021), and a more in-depth approach to the themes of the stories can strengthen students' moral understanding (Juwita & Hastuti, 2017). Thus, although students' moral expressions are still simple, they are beginning to be able to internalize and apply relevant life values contextually, which is an important foundation for further development of moral literacy.

The finding that students' written messages are still simple and normative can be explained by a combination of cognitive development factors, the characteristics of graded texts, and the design of reflective activities in interactive media. Developmentally, second-grade students are at the concrete operational stage, so their moral thinking still focuses on explicit information and direct rules, rather than on the interpretation of abstract or ambiguous values (Ginsburg & Oppen, 2016). In addition, most texts at the early levels are designed with a linear narrative structure and explicit moral messages to suit beginning reading abilities, so the opportunity to produce more complex reflections is still limited by the nature of the content itself (Badan Standar, Kurikulum, 2022). The design of prompts in reading logs, which tend to be factual for example, asking students to write down characters, settings, or messages directly—also does not fully encourage higher-order thinking processes such as inference, evaluation, or ethical consideration, which are the basis for forming

deep reflection (Day & Park, 2005). Thus, the results of this study indicate that the quality of simple messages is not only a characteristic of student ability but also a consequence of the level of complexity of the graded texts and the types of questions provided in the interactive media. The evaluation of this intervention shows the need for design modifications, such as the addition of tiered reflective questions, the provision of teacher scaffolding before filling out the reading log, and the selection of tiered materials that contain more diverse moral situations for higher levels, so that students' reflective abilities develop more progressively (Tomlinson, 2014).

Conclusion

This study shows that the use of interactive media with differentiated content combined with the use of reading logs can help second-grade elementary school students record their reading activities and reflect on their understanding of the stories they read. The results of the study show that the frequency of reading among students is still low, with the majority reading only 1-2 times a month. This low reading intensity is influenced by limited access to devices, lack of support and guidance from parents, and students' preference for printed books and digital entertainment over flipbook-based digital reading. The contents of the students' reading logs show that they are already able to write down the intrinsic elements of a story (title, author, illustrator, characters, setting, and time), albeit in a simple and general form. The moral messages written by the students vary from basic (normative, simple) to intermediate (contextual, concrete) to advanced (reflective and philosophical) levels. This reflects the development of students' moral literacy skills, which are still in the early stages but are already leading to an understanding of life values relevant to their daily context. Overall, interactive literacy media with differentiated content levels has the potential to be an effective means of increasing students' interest in reading, literacy skills, and moral reflection, even though its implementation still faces technical obstacles and a lack of learning environment support.

The findings of this study indicate that interactive media with tiered content has great potential to strengthen early literacy learning, but its effectiveness is highly dependent on the design of reflective activities and learning environment support. Therefore, teachers and schools need to utilize this media more strategically by adding higher-order thinking questions and providing consistent guidance so that students are encouraged to interpret stories more critically. Parents are expected to play an active role in accompanying their children in reading, both through digital media and printed books, as well as fostering a culture of family literacy through the habit of reading together. Future research should use a longitudinal approach to observe the development of moral reflection over the long term while also developing more adaptive interactive media that is rich in reflective stimuli. These efforts are important to ensure that digital literacy is not only a means of reading but also a vehicle for building deeper and more meaningful thinking skills for elementary school students.

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