

CHAPTER I

INTRODUCTION

1.1 Research Background

Literacy development remains a crucial issue in Indonesia, particularly at the elementary school level. Reading literacy is not only a fundamental skill but also a predictor of students' academic success and lifelong learning (OECD, 2023). However, national reports consistently show that Indonesian students exhibit low reading skills compared to global standards. According to the latest PISA results OECD (2023) Indonesian students fall below the OECD average in reading, indicating challenges in comprehension, motivation, and sustained engagement during reading activities. These findings highlight the urgent need to strengthen literacy learning through innovative and appropriate way to develop learning media, particularly in the early grades where reading habits begin to form.

Preliminary observations and interviews conducted at SD Lab Undiksha revealed several challenges related to students' reading behavioural engagement. During English learning, many students tended to lose focus when reading printed texts for an extended period. Several students stopped reading when they encountered unfamiliar vocabulary and tended to wait for teacher assistance instead of continuing to engage with the text. In addition, some students were observed engaging in side conversations or diverting their attention to unrelated activities during reading sessions. Interviews with the English teacher also revealed that students often showed limited persistence in

completing reading tasks, particularly when the materials lacked visual and interactive support. Furthermore, students demonstrated limited understanding of social values related to equality, empathy, and inclusivity. Most students were unfamiliar with the concept SDG-10: Reduced Inequalities and experienced difficulty connecting issues of fairness and social inclusion to their daily lives. These findings suggest the need for learning materials that not only support reading engagement but also introduce social values in meaningful and age-appropriate ways.

Students appeared more engaged and focused while using illustrated materials compared to simply reading static printed text. This suggests that current printed materials are not yet effective enough to sustain students' interest over time. Previous studies support this observation that students often shift their attention when reading materials fail to maintain interest (Ronconi et al., 2025). In contrast, interactive media such as digital storybooks have been shown to effectively increase behavioural engagement, including attention span and active participation through well-designed multimedia features (Chuang & Jamiat, 2023; Li et al., 2023). Given these findings, there is an urgent need to shift from passive, from the predominantly text-based English learning materials used in the classroom (Appendix 2) to an interactive digital storybook integrating SDG-10 values as supplementary learning media, providing a more engaging and contextually meaningful learning experience for fourth-grade students.

An analysis of the student workbooks used in fourth grade at SD Lab Undiksha reveals that the teaching materials were dominated by passive, paper-

based tasks, such as multiple-choice exercises and word-matching activities. Although the textbook included several illustrations, the reading activities primarily focused on reading printed passages and completing follow-up exercises, providing few opportunities for students to actively interact with the reading content.. Tomlinson (2012) argued that conventional teaching materials are frequently limited to mechanical activities that do not sufficiently engage learners. Furthermore, Damayanti and Mukarto (2024) emphasized that the absence of interactive features in printed materials often fails to trigger optimal behavioural engagement. Without visual stimulation and direct feedback as suggested by Fredricks et al. (2004), students tend to demonstrate lower effort in completing reading tasks, which may hinder literacy achievement.

To address these challenges, digital storybooks have emerged as an effective learning medium. By integrating multimedia elements, such as animations, narrations, sound effects, and interactive features, these media can significantly boost students' motivation and sustain engagement during reading activities (Smeda et al., 2014). Recent findings by Samuel (2024) further reported that digital storytelling assists young learners in maintaining focus, following complex storylines, and participating more actively in reading tasks. Furthermore, research by Asih et al. (2024); Ratminingsih et al. (2020) demonstrates that the integration of strong visuals, synchronized audio, and interactivity creates a more stimulating environment that facilitates deeper story comprehension. Therefore, well-designed digital storybooks have the potential to support students' behavioural engagement during reading activities.

The development of digital reading media is closely aligned with the Sustainable Development Goals (SDGs), which provide a global framework for institutions and educators to foster equitable, inclusive, and sustainable progress (UNESCO, 2017). In the educational context, the SDGs emphasize the importance of providing learning opportunities that are both accessible and responsive to the diverse needs of learners. Recent research by Astawa et al. (2024) demonstrates that integrating SDG-based content into language instruction does more than strengthen linguistic skills; it actively fosters social responsibility and sustainable awareness. By aligning digital storybook with these global goals, educators can transform classroom literacy activities into meaningful opportunities for character development.

Among the seventeen SDGs, this study specifically focuses on SDG-10: Reduced Inequalities. In line with the Education for Sustainable Development Goals learning objectives, this research emphasizes the behavioural dimension by encouraging learners to demonstrate inclusive behaviours and empathy through reading activities embedded in the digital storybook. By integrating empathy-based narratives, such as the experiences of characters facing learning challenges into a digital storybook, students are guided to identify and address unfair classroom dynamics. This approach encourages students to adopt supportive behaviours, transforming the storybook into a tool that bridges social gaps. Moreover, the multimodal features of digital storybooks cater to diverse learning preferences, allowing students of varying abilities to participate in literacy activities more actively and confidently (Aisyah & Nuraeni, 2022). Consequently, this integration not only fosters sustained behavioural

engagement but also provides a purposeful, context-driven environment for practicing inclusive values from an early age.

In light of the urgent need to enhance students' behavioural engagement in reading while fostering inclusive values, this study aims to design, develop, and evaluate the quality of an SDG-10-based interactive digital storybook. By focusing on empathy as a core social value, this research seeks to provide fourth-grade students at SD Lab Undiksha with supplementary learning media that are not only literacy-oriented but also contextually meaningful to support their active and inclusive participation in the learning process.

1.2 Problem Identification

Based on preliminary observations and research at SD Lab Undiksha, several critical issues regarding reading literacy and engagement among fourth-grade students have been identified. These students often demonstrate limited focus and persistence when interacting with static, text-heavy reading tasks, suggesting that existing materials would benefit from additional stimulation to sustain their interest. Although these printed resources are valuable, the classroom environment presents a need for supplementary interactive media that can better cater to diverse learning preferences and stimulate active participation. Furthermore, there is an opportunity to enrich the current literacy experience by incorporating meaningful content that fosters social values, such as empathy and inclusivity, which align with the principles of SDG-10. Students also exhibit a tendency to rely on direct teacher assistance when encountering obstacles like unfamiliar vocabulary, rather than exploring the text independently. Consequently, while current materials support basic literacy,

there is a clear need to introduce SDG-10-based digital storybooks as a supplementary tool to enhance student independence, provide visual-interactive support, and create a more contextually meaningful learning experience that addresses these specific literacy and engagement challenges.

1.3 Limitation of The Problem

This research is confined to the development and evaluation of a digital storybook specifically designed as supplementary learning media for fourth-grade students (aged 9–10) at the Undiksha Elementary School Laboratory, Singaraja, Bali. Due to the context-specific nature of this setting, the findings are not intended for generalization to different educational levels, subjects, or geographical regions. The scope of this study is strictly limited to facilitating students' behavioural engagement in reading activities. Consequently, other literacy skills such as writing, speaking, and listening, as well as other dimensions of engagement, remain beyond the scope of this research. Furthermore, the study focuses on the quality of the developed digital storybook and its potential to facilitate reading behavioural engagement rather than its instructional effectiveness. Since the ADDE model employed in this study does not include a separate implementation phase, the product was evaluated through expert validation and teacher evaluation within the development process. Consequently, the study does not provide evidence of long-term effectiveness or sustained behavioural changes among students. As a result, this research does not investigate the long-term sustainability or the stability of behavioural changes over an extended period. Finally, it is important to note that the implementation of this media is dependent on the availability of supporting

devices and a stable internet connection. By explicitly stating these limitations, this research aims to provide a transparent foundation that may assist future researchers in further exploring digital storybooks within different educational contexts.

1.4 Research Question

Based on the background of the study above, the research question in this study can be formulated as follows:

- a) What are the needs of grade 4 students and teacher regarding materials that integrate SDG-10 to facilitate reading behavioural engagement?
- b) How can a digital storybook integrating SDG-10 be designed and developed to support grade 4 students' reading behavioural engagement?
- c) How is the quality of the developed SDG-10 digital storybook, as evaluated by experts, in terms of content, design, and relevance to literacy and sustainability education?
- d) How is the quality of the developed SDG-10 digital storybook, as evaluated by teacher, in terms of students' reading behavioural engagement?

1.5 Research Objective

The objectives of this study are as follows:

- a) To identify the needs of grade 4 students and teacher reading materials that integrate SDG-10 to facilitate reading behavioural engagement.

- b) To design and develop a digital storybook integrating SDG-10 to support grade 4 students' reading behavioural engagement.
- c) To evaluate the quality of the developed SDG-10 digital storybook, as assessed by experts, in terms of content, design, and relevance to literacy and sustainability education.
- d) To evaluate the quality of the developed SDG-10 digital storybook, as assessed by teacher, in terms of students' reading behavioural engagement.

1.6 Specification of the Product

The product developed in this research is an interactive digital storybook designed to facilitate reading engagement. The specifications of the product are as follows:

- a) Platform and Format: The product is a web-based digital storybook that can be accessed across multiple devices, including tablets, laptops, and smartphones. Since the product is delivered online, its implementation depends on the availability of adequate technological facilities, such as compatible digital devices and stable internet connectivity.
- b) Content Integration: The digital storybook integrates the values of SDG-10 through a narrative specifically designed for young learners. The storyline is based on everyday school experiences familiar to elementary students, such as learning difficulties, peer teasing, and supportive friendships. These contextual situations are presented through fable characters to support inclusivity, empathy, respect for diversity, and equal learning opportunities.

- c) Interactive Features: The storybook is equipped with “clickable” elements that trigger animations or background music to maintain student interest.
- d) Language Support: It features a built-in translation tool for difficult English vocabulary to support students’ comprehension without interrupting the reading flow.
- e) Multimodal Elements: The media combines high-quality illustrations, textual narrative, and synchronized background music to cater to various learning styles.
- f) Contextual Storyline: The story presents real-life social situations commonly experienced by elementary school students, including experiences of exclusion, peer support, and classroom interactions. Through these situations, abstract concepts related to SDG-10 are simplified into meaningful and relatable learning experiences.

Interactive features are designed to maintain students’ attention span so that they are not easily distracted by other activities outside of reading assignments.

1.7 Research Significance

This research is expected to provide both theoretical and practical contributions. This study contributes to the literature on English language pedagogy for young learners theoretically, particularly regarding the use of interactive digital media to foster behavioural engagement. It provides empirical evidence on how technology-mediated storytelling can be used to deliver complex global issues, such as SDGs to primary school students.

- 1) For Teachers: It provides an innovative and ready-to-use teaching resource that simplifies the delivery of SDG topics while enhancing students' literacy skills.
- 2) For Students: It offers a joyful and engaging reading experience that helps them improve their English vocabulary and social awareness.
- 3) For Future Researchers: It serves as a reference for developing similar digital-based learning materials or for further exploring other dimensions of student engagement.

1.8 Definition of Key Terms

To provide a clear conceptual understanding of the key terms used in this study and to avoid ambiguity in their interpretation, the following conceptual definitions are presented based on relevant theories and literature.

- a) Digital Storybook refers to an electronic story presented through digital devices that integrates written text, illustrations, audio, animation, and interactive features to support children's literacy learning and reading experiences (Mayer & Fiorella, 2021; Prasetya & Hirashima, 2018).
- b) SDG-10 (Reduced Inequalities) refers to one of the 17 Sustainable Development Goals established by the United Nations, aiming to reduce inequalities within and among countries by promoting equal opportunities, social inclusion, and non-discriminatory practices (UNESCO, 2017).
- c) Reading Behavioural Engagement refers to students' observable participation during reading activities, reflected through behaviours

such as attention, effort, persistence, and active involvement throughout the reading process (Fredricks et al., 2004; Guthrie et al., 2012).

- d) Fourth-Grade Students refer to learners who are generally between 9 and 10 years old and are developing more advanced reading comprehension, vocabulary, and literacy skills through increasingly complex learning experiences (Chall, 1984).

The operational definitions describe how each key term is specifically interpreted and applied within the context of this study.

- a) Digital Storybook refers to an interactive electronic reading medium that integrates text, visuals, and multimedia features to deliver a narrative.
- b) SDG-10 (Reduced Inequalities) refers to the behavioural learning objectives embedded in the developed digital storybook, namely recognizing inequalities, understanding the causes of inequalities, respecting and supporting others, taking inclusive actions, and promoting equality through age-appropriate situations presented in “The Book That Made Turtle Cry.”
- c) Reading Behavioural Engagement reading behavioural engagement refers to students’ observable behaviours while interacting with the developed digital storybook. It is operationally measured through indicators of effort, persistence, attention, positive conduct, active participation, reading frequency, and interaction with texts, as assessed using the teacher observation checklist.
- d) Fourth-Grade Students refer to students aged 9–10 years old at SD Lab Undiksha, particularly those in the fourth grade, who are the target

learners of the developed digital storybook and are in the process of developing foundational English literacy.

