AN INTERACTIVE BOOK TO PROMOTE EMPATHY IN EARLY CHILDHOOD TOWARD SOUTH KALIMANTAN'S ENDEMIC WILDLIFE

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Abstract: This research aims to develop an interactive book as a medium to foster empathy in early childhood towards endemic animals in South Kalimantan, particularly the proboscis monkey (Bekantan) and mudskipper fish (Timpakul). The research follows a research and development (R&D) methodology, encompassing need analysis, product design, development, and evaluation stages. The interactive book, titled *Antan & Kepi: The Friendship that Grew by the River*, tells the story of a friendship between Antan, the proboscis monkey, and Kepi, the mudskipper, which forms when Antan shows empathy by rescuing Kepi from being trapped in rocks. The book aims to address the identified lack of local wisdom-based reading materials, particularly those featuring endemic animals, available to young learners in South Kalimantan. The product was validated by two experts: a media expert and an early childhood English expert. The validation process assessed content feasibility, alignment with psychological and linguistic development, and technical aspects of media presentation. The final product received an overall validation score of 86.08%, indicating high feasibility for use. Despite this, experts suggested improvements in font size and image clarity to enhance readability and visual appeal. The findings highlight the potential of interactive media to contextualize learning and support language acquisition while instilling empathy and environmental awareness in young children. The interactive book provides an engaging, culturally relevant resource for early childhood education, offering a meaningful, localized learning experience that connects children with their environment.
Keywords: *interactive book, emphaty development, early childhood education, endemic animals, South Kalimantan*

INTRODUCTION

Empathy, defined as the awareness and ability to share another person's feelings, has been shown to play a crucial role in the development of social behavior (Eisenberg & Fabes, 1998). The importance of empathy in social relationships has been empirically proven. Therefore, teaching empathy skills during childhood development is critical; introducing this concept at an early age provides a strong foundation for a child's behavioral growth. Conversely, if empathy is taught later, such as in adulthood, its impact on shaping a child's character and personality will be less significant (Muhtadi, 2008).

Meanwhile, interactive books play an important role as a medium for developing empathy in young children towards endemic animals (Webber, 2017; Wauters & Dirks, 2017). In this context, interactive books can serve as windows connecting children to the lives of endemic animals, presenting vivid and in-depth depictions of their habitats and behaviors. Through interactive features such as sound, moving images, and engaging text, these books can spark children's interest and curiosity, helping them to feel empathy toward the lives and challenges faced by these animals (Wasik & Bond, 2001; Bourma et al., 2022; Bus et al., 2020). Thus, interactive books not only serve as enjoyable learning tools but also as effective instruments for fostering a sense of care and responsibility for the natural environment in the future.

In fostering empathy in children aged two to four, they undergo a developmental transition from 'emotional contagion' in infancy to more socially and morally modulated responses influenced by the empathy of older children (Moreno et al., 2008). Therefore, it is important to strengthen the understanding that empathy not only involves feeling what others feel but also having the capacity to deeply understand their perspectives and emotions. This entails the ability to put oneself in another person's position, understand their experiences, and respond with genuine sensitivity and care. Developing empathy in children requires awareness of both aspects: emotional responses directed by others and affective reactions focused on others, in order to shape a holistic and sustainable empathy skill set (Eisenberg & Fabes, 1998).

In relation to teaching empathy in children toward the animals living around them, Turner et al. (2015) state that urbanization has led to a growing disconnection between humans and nature. Thus, efforts are needed to reconnect children with nature. Education about nature is essential in bridging this growing gap (Bus et al., 2020; Moon, 2025). Interaction with nature can improve children's physical and mental health, help them develop social skills such as cooperation and leadership, and reduce stress and anxiety (McLaughlin et al., 2015). Therefore, education about nature is not only important for expanding children's knowledge but also for fostering sustainable attitudes and values toward the environment, particularly regarding the animals that live around them (Born, 2018).

Although existing literature emphasizes the importance of fostering empathy in young children and highlights the role of interactive books in developing empathy toward endemic animals, there remains a notable gap in research focusing on the effectiveness of such books in specific cultural contexts, particularly in fostering empathy for endemic animals in South Kalimantan, such as Bekantan and Timpakul. Additionally, while several studies explore empathy development in early childhood, few have explored how interactive books tailored to local species can not only teach empathy but also promote a deeper understanding of conservation efforts for local wildlife. Furthermore, empirical studies that measure the long-term impact of such educational tools on children's behavior towards the environment remain scarce. This research addresses the identified gaps by systematically developing and testing a tool that not only fosters empathy in young children but also promotes conservation education through culturally tailored content. In early childhood education, empathy in children can be developed through various accessible methods, including meaningful activities using appropriate strategies, models, methods, and facilities. Thus, this study develops an Interactive Book as a medium for developing empathy in children.

RESEARCH METHODOLOGY

This study uses a research and development (R&D) design aimed at creating an Interactive Book as a Medium for Developing Empathy in Early Childhood toward Endemic Animals in South Kalimantan. The learning media takes the form of an interactive book designed to meet the needs of children learning English. The researcher adapts the model by Dick and Carey (2005) due to its accessibility and feasibility. This approach is also considered the most promising strategy for enhancing education. Research and development were chosen because this type of research aims to develop a product and covers the needs when creating materials or books. The research procedure includes (1) conducting a learning analysis, (2) developing the interactive book, (3) designing and conducting formative evaluations, (4) revising teaching materials, and (5) conducting summative evaluations or product trials. Participants in the study consist of the principal and teachers teaching early childhood students aged 4-6 years from Prumnas Kayutangi Kindergarten.

RESULT AND DISCUSSION

The findings explain the results obtained during product development, including needs analysis, product design, product development, product evaluation, and the final product.

Needs Analysis Results

Initially, a needs analysis was conducted to determine the needs of English teachers and students in kindergartens in Banjarmasin. The researcher observed the teaching process at one kindergarten and conducted interviews with teachers and students to gather specific information about the availability of teaching materials incorporating local wisdom taught in English. The results of these observations and interviews formed the basis for product development. The needs analysis revealed that most teachers and students stated that there were no specific lessons related to local wisdom, particularly concerning South Kalimantan's endemic animals. Among the endemic animals discussed, students were most familiar with the proboscis monkey (Bekantan) and mudskipper (Timpakul). The results also indicated that most students preferred learning English through engaging reading materials and storytelling. Based on the data collected through research instruments, the researcher took these findings into consideration for product development.

Several points can be concluded from the needs analysis: first, it is important to provide learning materials that align with students' preferences and needs. Second, it is crucial to develop and design learning resources that present material attractively and engagingly. Based on these points, the researchers decided to develop an Interactive Book as a Medium for Developing Empathy in Early Childhood toward Endemic Animals in South Kalimantan.

Product Design Results

Before developing the product, the researcher designed the product based on the needs analysis. The product design stage involved two main steps: product planning and creating a basic blueprint. The first step was planning. At this stage, the researcher created a

plan that served as the foundation for the product blueprint. This plan was based on the preferences of the students gathered during the needs analysis. The animals most frequently selected by the students were the proboscis monkey and the mudskipper. To foster empathy in students, the product would include stories that promote character development, such as: Bekantan's Kind Nature, Rescue Mission, Helping Hand, New Friendship, and a lesson in new friendship.

Product Development Results

The developed product consists of a series of interactive books containing stories about the proboscis monkey and the mudskipper, which feature these animals as the main characters. The product development process followed several steps. After the blueprint was created during the product design stage, materials for the interactive book were developed. The content related to the proboscis monkey and mudskipper was gathered from various sources, including books and online resources, and adapted as necessary.

However, to suit the students' level and abilities, some content was modified by the researcher. After gathering the materials, the researcher designed how the content would be presented in the interactive book. The English used in the stories was simplified to match the students' level and abilities. The next step was product design. The primary product of this research is an interactive pop-up book telling the story of two endemic animals from South Kalimantan, Bekantan and Timpakul. Therefore, this interactive book contains not only text but also images that clearly depict these animals. To make the interactive book more engaging, the researcher used various images and contrasting colors.
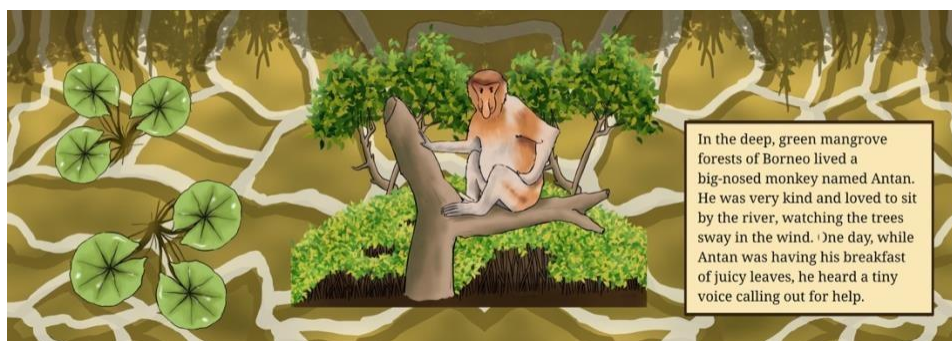
Image 1. Results of the Development of the Interactive Book Product

Product Evaluation Results

After the product draft was completed, it was evaluated by media experts and experts in Early Childhood English language education. Two main aspects were assessed: content validity and media aspects. In terms of content, the evaluation covered the appropriateness of the story's content in relation to early childhood English language development, its alignment with early childhood psychological development, and the accuracy of the language style. The media aspect focused on technical feasibility, content validity, language, and its ability to stimulate curiosity. The average score from all evaluations conducted by the media and early childhood English experts was 86.08%, indicating that the interactive book is suitable for use. The media experts noted that the product was both engaging and simple. However, they recommended redesigning the format, including the font, to make it more appealing and legible.

Discussion

The outcome of this study is an interactive pop-up book based on the local wisdom of South Kalimantan, featuring a story about two endemic animals, the proboscis monkey (*Bekantan*) and the mudskipper (*Timpakul*), as the main characters. The final product is titled *Antan & Kepi: The Friendship that Grew by the River*, which narrates how Antan (the proboscis monkey) and Kepi (the mudskipper) become friends through Antan's empathy when he rescues Kepi, who is trapped in rocks. The story concludes with a beautiful friendship between these two endemic animals of South Kalimantan.

This product is believed to meet the needs identified in the needs analysis. One of the key issues discovered was the lack of reading materials or content that incorporates local wisdom, particularly about South Kalimantan's endemic animals, which are rarely provided by schools or teachers. Furthermore, there is a need for accessible materials that can be used both in and outside the classroom. Interactive books play a crucial role as a medium for fostering empathy in young children toward endemic animals (Webber, 2017; Wauters & Dirks, 2017). In this context, interactive books can serve as windows connecting children to the lives of endemic animals, offering vivid and immersive representations of their habitats and behaviors.

The results of the needs analysis highlight the importance of aligning instructional materials with local wisdom, such as the endemic animals of South Kalimantan (the proboscis monkey and the mudskipper). This aligns with efforts to contextualize teaching by developing materials and activities that reflect students' backgrounds, interests, and experiences, enabling them to relate to their everyday lives (Kusumawati, 2017). Thus, it is important for students to understand the meaning of language through exposure to authentic language use that connects with their real-world situations. In other words, this approach makes learning more meaningful, engaging, memorable, and applicable to real-life contexts.

Following the prototype design phase, the material development process was undertaken. The interactive book was developed considering two main issues: content and media aspects. First, in terms of content, the two main characters are endemic animals of South Kalimantan, the proboscis monkey and the mudskipper. Educational materials should be contextualized based on students' experiences, conditions, and first language (Sinaga, 2018). By using these two endemic animals as the main characters, it is hoped that students will develop a closer connection to nature and their local environment. The second aspect concerns the media, where attention must be given to the visualization of the interactive book. Children need to have their interest, imagination, and curiosity stimulated to maintain their attention in the classroom, as they have a lot of physical energy and are easily distracted (Shin, 2014). Educational media must be engaging and motivate students to learn and remember English vocabulary through visual aids. Therefore, choosing vibrant colors and clear, easy-to-read text is essential. The cover was designed with a bright blue background and attractive imagery to capture attention.

The interactive book has been designed, developed, and subsequently validated to ensure the material's validity in terms of both content and media. This aligns with the view that validation is a process of assessing product design by providing a rational evaluation (Emzir, 2010). The materials in the digital resource were validated by two experts, each specializing in their respective fields. In this study, the validation process was conducted by two experts in accordance with their expertise. Based on expert validation, the developed interactive book was categorized as highly valid, with a validity score of 86.08%. This aligns with the opinion that a score interval of 81-100 is considered highly valid (Riduwan, 2012). Based on this, the interactive book can be finalized as the final product.

Although the developed interactive book is considered valid, there are both strengths and weaknesses highlighted by the experts' evaluations. One of the strengths is that the interactive book can be used as a supplementary resource for students to enhance their knowledge of English and empathy based on local wisdom. Through interactive features such as moving images and engaging text, the book can spark children's interest and curiosity while helping them develop empathy toward the lives and challenges faced by endemic animals (Wasik & Bond, 2001; Bourma et al., 2022; Bus et al., 2020). Thus, the interactive book not only serves as an enjoyable learning tool but also as an effective means of shaping a caring and responsible attitude toward the natural environment for the future.

The final advantage is that this product is presented in a way that appeals to students. The material is engagingly presented in the form of a pop-up book, incorporating numerous illustrations and attractive images. Pop-up books contain paper elements that rise or move when

the book is opened and fold flat when closed. This allows students to visualize their ideas using the pop-up book format. Furthermore, if children create their own visual elements, they are more likely to engage with, become interested in the activity, and take more ownership of the material created (Moon, 2005).

On the other hand, several weaknesses were also noted by the experts. The first issue is that the font used is too small for the audience to read comfortably. Additionally, some images are unclear due to their small size. Therefore, the font should be enlarged, and clearer images of tourist sites should be included to better reflect the actual appearance of these locations

CONCLUSION

The development of the interactive pop-up book, *Antan & Kepi: The Friendship that Grew by the River*, successfully fosters empathy in early childhood education toward South Kalimantan's endemic animals. By integrating local wisdom, it addresses the lack of culturally relevant learning materials featuring the proboscis monkey and mudskipper fish. With a high feasibility score of 86.08% from expert validation, the book effectively promotes language development and environmental awareness, despite suggestions to improve font size and image clarity. This research demonstrates the importance of contextualized materials in nurturing empathy and environmental care among young learners.

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