



Needs Analysis For Developing Digital Folktale Books In Vocational Education Context

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Abstract: This study responds to the need for innovative and culturally relevant digital learning media that engage vocational high school students. The objectives are to (1) identify students' needs regarding content, design, and features of digital folktale books, (2) analyze students' and teachers' expectations toward their effective presentation, and (3) provide a conceptual foundation for developing digital folktale learning materials. Using a mixed descriptive method, data were collected through questionnaires from 30 Grade XI students and interviews with two teachers. The results show that 100% of students own smartphones and 83.3% have daily internet access. Students strongly agreed that digital folktale books should feature illustrations and animations (mean = 3.9), integrate moral and local cultural values (mean = 3.8), and be accessible via smartphones (mean = 3.8). Teachers also emphasized the need for interactive features such as quizzes and audio to improve comprehension. The findings highlight that digital folktale books can enhance motivation and contextual learning, provided that design considers accessibility and local culture. The study contributes practical insights for developing digital literature materials suited to vocational education contexts.

Keywords: Digital books, Local culture, Folktales, Literature learning

INTRODUCTION

The advancement of digital technology in the 21st century has brought significant transformations to the educational landscape, including how teachers deliver instruction and how students engage in learning. The integration of technology into the learning process has become not only a curricular mandate but also an essential component of the digital literacy competencies that students are expected to possess. In this regard, the utilization of digital learning media such as digital storybooks, emerges as an innovative alternative to enhance student engagement, particularly in Vocational High Schools (SMK), where students are required to develop a balanced set of academic knowledge and practical skills. Digital storybooks not only promote the cultivation of character and cultural values but also support students in understanding narrative texts through more appealing and interactive formats (Benabbes & Taleb, 2024).

Preliminary observations conducted at Muhammadiyah Vocational High Schools (SMKS) in Rantauprapat, Labuhanbatu Regency, reveal that the teaching of Indonesian language still



predominantly relies on conventional, printed learning materials that tend to be monotonous. Teachers often depend solely on government-issued textbooks without adapting them to the specific needs and characteristics of vocational students. Consequently, students exhibit low reading interest toward literary texts, including folktales, and demonstrate limited comprehension of the embedded moral values (Bulan & Hasan, 2020; Prastya et al., 2021). Moreover, although the majority of students possess adequate digital skills, they have not been supported with contextual and interactive digital learning resources. This situation indicates a gap between students' digital potential and the availability of appropriate learning materials, thereby necessitating a needs analysis as an essential initial step in developing a digital storybook for vocational students.

Previous studies have demonstrated that the development of digital learning materials can significantly enhance students' motivation and learning outcomes (Gasser et al., 2022; Lestari et al., 2024; Prastya et al., 2021). Other scholarly works further emphasize that conducting a need analysis is a crucial preliminary stage in instructional material development, as it ensures the alignment of content with learners' contexts and characteristics (Richards, 2017). The majority of existing research has been predominantly carried out in junior and senior high school settings, while the vocational education context (SMK) remains underexplored. Moreover, limited studies have specifically addressed the use of digital fable books as literary learning media in vocational schools. This study intends to fill this research gap by conducting a comprehensive need analysis for the development of a digital fable book tailored to students of SMKS Muhammadiyah Rantauprapat in Labuhanbatu Regency.

The development of digital instructional materials represents an essential innovation in contemporary education. Digital materials are considered more interactive, flexible, and better able to accommodate diverse student learning styles (Bulan & Idhar, 2021). In language learning contexts, digital materials provide opportunities to present literary texts enriched with multimedia elements such as audio, visuals, and animations, thereby enhancing students' engagement and learning experiences (Cahyanti & Nuroh, 2023). Furthermore, digital-based learning aligns with the student-centered principles promoted in the *Kurikulum Merdeka*, which highlights learners' autonomy and creativity in exploring various sources of knowledge. Hence, the development of a



digital fable book is highly relevant to improving students' interest and comprehension of literary texts in Indonesian language classes at SMKS Muhammadiyah Rantauprapat.

The needs analysis stage is a crucial preliminary phase in the development of instructional materials. According to Bulan et al., (2024), needs analysis enables researchers and developers to determine the most appropriate content, linguistic features, and format that align with learners' characteristics. Within the context of vocational education, student needs encompass not only academic aspects but also preparedness for an increasingly digitalized workforce (Abimbade, 2025; Von Gillern et al., 2025). The findings from needs analysis provide a data-driven foundation for designing instructional materials that are relevant, contextual, and applicable to students' learning environments. Therefore, implementing a needs analysis in the development of digital folktale books represents a strategic step toward producing learning media that are both effective and aligned with real-world demands in educational settings.

Folktales constitute a traditional form of prose that carries strong educational and moral values. In vocational education, folktales can be utilized to foster character development, nurture empathy, and enhance students' narrative literacy skills (Arsari, 2022). The transformation of folktales into digital formats broadens their accessibility and increases their appeal, especially for learners who are highly familiar with technology. Solissa et al., (2024) demonstrated that interactively presented digital folktales can improve students' motivation and comprehension of the moral messages embedded within the narratives. Hence, digital folktale books serve not only as literary learning media but also as tools to support character formation and strengthen digital literacy among vocational students, ultimately contributing to the development of the Pancasila Student Profile.

This study focuses on analyzing the needs of Grade XI students at SMKS Muhammadiyah Rantauprapat regarding the development of a digital folktale book that aligns with their characteristics, interests, and local context. The objectives of this study are to: (1) identify students' needs related to the content, design, and features of a digital folktale book; (2) analyze students' and teachers' expectations of the digital folktale presentation; and (3) provide a conceptual foundation for the development phase of digital folktale instructional materials that can support literature learning at SMKS Muhammadiyah Rantauprapat. The needs analysis approach is



expected to yield strong empirical data to ensure that the developed product aligns with the actual requirements of end users, namely teachers and students.

METHOD

This study employs a concurrent mixed-method design, integrating both quantitative and qualitative data simultaneously to obtain a comprehensive understanding of students' and teachers' needs regarding the development of a digital folktale book in the vocational school context. This approach was selected to capture respondents' experiences, perspectives, and expectations more holistically rather than merely in numerical form (Creswell, 2018). Data were collected through observation, interviews, and questionnaires to map the ideal design and specifications of a digital folktale book that align with the needs and preferences of Grade XI students at SMKS Muhammadiyah Rantauprapat.

This study was conducted at SMKS Muhammadiyah Rantauprapat, North Sumatra, focusing on Grade XI students. The site was purposively selected based on the availability of technological facilities and teachers' readiness to implement digital-based learning. The research participants consisted of 30 Grade XI students and 2 Indonesian language teachers. The number of participants was determined for exploratory purposes, aiming to obtain representative preliminary insights from a manageable group within one school context. The students were chosen because they had prior experience in literature learning and were able to provide input on digital instructional materials, while the teachers were included due to their strategic role in planning and implementing classroom instruction.

Data were collected through questionnaires, semi-structured interviews, and classroom observations. The questionnaire was designed to identify students' needs concerning content, design, and features of digital folktale books. Before distribution, the questionnaire items were validated through expert review by two university lecturers specializing in language education and instructional media, and a pilot test was conducted with five students to ensure clarity and reliability. The instrument achieved a Cronbach's Alpha coefficient of 0.86, indicating high internal consistency. The interviews explored teachers' perspectives on the effectiveness of digital media and classroom challenges, while observations aimed to understand how students interact



with texts and learning media in real contexts. To ensure data credibility, source triangulation was conducted (Creswell, 2018).

Ethical considerations were strictly observed throughout the study. All participants were informed of the research objectives and procedures before data collection. Informed consent was obtained from both teachers and students, ensuring voluntary participation. The confidentiality of participants' identities and responses was maintained, and the data were used solely for academic purposes.

The quantitative data from the questionnaire were analyzed using descriptive statistical techniques through percentage calculations to identify trends in students' needs. Meanwhile, qualitative data from interviews and observations were analyzed using Miles and Huberman's interactive model, consisting of three stages: data reduction, data display, and conclusion drawing (Miles & Huberman, 1994). The combined results formed a comprehensive needs profile of students and teachers as the conceptual foundation for designing digital folktale learning materials suitable for vocational education contexts.

RESULT AND DISCUSSION

Overview of Respondents

The following table presents the profile of the respondents involved in this study, namely the students who participated in the needs analysis for using digital books as a learning medium. The data indicate that the number of male students exceeds that of female students. Most respondents already possess personal smartphones, and the majority access the internet daily to support their learning activities. However, a small proportion of students do not have regular internet data packages, which may hinder the optimal use of digital learning media. These findings suggest that, in general, students have adequate device support and internet access to utilize digital books, although affordability of internet data remains a factor that should be considered in the development of digital learning materials.

Category	Total	Percentage
Male	17	56,7%
Female	13	43,3%
Owens a personal smartphone	30	100%



Daily internet access	25	83,3%
Doesn't have a regular data quota	5	16,7%

Table 1. Student respondent profile

Based on Table 1, it can be observed that 30 students were selected as respondents in this study. The respondents consisted of 17 male and 13 female students from Grade XI. A total of 25 students reported having daily internet access, meaning they regularly have their own data packages, whereas 5 students indicated that they do not have consistent access to internet data.

Needs for Digital Folktale Books among Students of SMKS Muhammadiyah Rantauprapat

The questionnaire instrument was employed to examine students' perceptions regarding their needs and preferences in using digital books as a learning medium. The statements in the questionnaire focused on several aspects, including reading interest, media interactivity, the integration of moral values and local culture within the content, supporting features such as illustrations and animations, as well as accessibility through smartphones. Additionally, the questionnaire assessed the extent to which layout design and the availability of interactive exercises influence students' motivation to read digital books. The assessment utilized a Likert scale ranging from 1 to 4, with higher scores indicating stronger agreement with the given statements. The results of this assessment are presented in the following table.

No	Statement	Average score (1-4)	Category
1	I am interested in reading digital-based books.	3.6	Strongly agree
2	I prefer learning through interactive media such as digital books.	3.7	Strongly agree
3	The content of folktale books should be linked to moral values and local culture.	3.8	Strongly agree
4	An engaging digital book must include illustrations and animations.	3.9	Strongly agree
5	I need digital books that can be accessed through a smartphone.	3.8	Strongly agree
6	I would like digital books to provide interactive exercises or quizzes.	3.5	Agree
7	The layout and design of a digital book greatly influence my interest in reading.	3.9	Strongly agree

Table 2. Summary of the Results of the Digital Storybook Needs Questionnaire

Based on the analysis presented in Table 2, it is evident that students demonstrated a very high level of agreement regarding the use of digital books in learning. Statements related to students' interest in reading digital books, their preference for learning through interactive media, and the importance of integrating moral values and local culture into folktale content all received



mean scores above 3.6, categorized as “Strongly Agree.” Furthermore, visual components such as illustrations and animations, along with ease of access via smartphones, were also perceived as highly important. However, the provision of interactive exercises or quizzes was categorized as “Agree,” although the score remained relatively high. These findings indicate that students have a strong interest in digital books that are engaging, interactive, and easily accessible, suggesting that such media can serve as an effective and relevant learning tool aligned with their needs.

Interviews with Teachers at SMKS Muhammadiyah Rantauprapat

To complement the questionnaire data, interviews with teachers were conducted to gain a deeper understanding of the needs and challenges associated with the integration of digital media in the classroom. These interviews aimed to explore teachers’ firsthand experiences regarding students’ interest and difficulties in using digital books, as well as to gather insights related to necessary features and content enhancements. The interview findings were then categorized into several key themes relevant to the development of digital-based instructional materials. These themes are presented in Table 3 below.

Theme	Main Finding	Frequency of Occurrence
Need for digital media	Printed books are less engaging for vocational high school students	2 from 2 teachers
Integration of local cultural values	Local stories need to be incorporated to increase students’ sense of familiarity	1 from 2 teachers
Interactive features	Quizzes and audio elements are required to enhance comprehension	1 from 2 teachers
Technical constraints	Not all students have stable internet access	1 from 2 teachers
Visual design	Digital books should be colorful and easy to operate	2 from 2 teachers

Table 3. Summary of Teacher Interview Findings

Based on the summary of interview findings, the teacher emphasized that printed books are less engaging for vocational school students, making digital media more suitable for the learners’ characteristics. The integration of local cultural values is also considered important so that students feel more connected to the learning content. In addition, the teacher suggested incorporating interactive features such as quizzes and audio to enhance comprehension. Nevertheless, there are technical barriers related to the unequal access to stable internet among students. The teacher also highlighted the importance of an appealing visual design that is colorful and easy to operate, as it can increase students’ learning motivation when using digital books.



Discussion

Survey results indicated high scores on statements that students are “interested in reading digital-based books” (average score 3.6) and “prefer learning with interactive media such as digital books” (average score 3.7). These findings suggest that there is strong motivation among students to use digital learning media in the vocational school context. According to motivation theory, students’ needs for autonomy, competence, and relatedness can strengthen their intrinsic motivation toward learning tasks that are perceived as relevant and meaningful (Alamer, 2022). Therefore, the development of a digital storytelling book that utilizes interactive features and smartphone access aligns with this motivational framework, as it provides flexible and engaging learning options for students. This is also in line with studies showing that interactive e-book media can enhance student engagement when the design is well-targeted (Zendrato et al., 2025).

Student responses showed very high agreement with the statement that “The content of storybooks should be connected with moral values and local culture” (average score 3.8). This indicates students’ awareness of the importance of local context in digital learning media. Literature reviews suggest that cultural relevance can strengthen learning meaning and students’ emotional connection to the material. In this context, the integration of local cultural values in digital teaching materials not only meets the cultural needs of learners but also supports the relatedness aspect in motivation theory. By incorporating local folktales, the media becomes more “connected” to students’ experiences, thus increasing the likelihood of use and reading interest.

The table shows that statements related to “Attractive digital books must include illustrations and animations” (average score 3.9) and “The appearance and design of digital books greatly influence my interest in reading” (average score 3.9) received very high agreement. This is consistent with research showing that interactive e-books that incorporate multimedia such as illustrations, audio, and animations have been proven to enhance students’ comprehension and retention (Zendrato et al., 2025). On the other hand, studies evaluating criteria for interactive e-books state that visual design and navigation usability are important dimensions for the effectiveness of digital learning media (Purnama, 2022). Therefore, the design of the developed digital folktale teaching materials must consider the quality of illustrations, animations, and a responsive interface to optimize students’ interest and learning process.



Students gave an average score of 3.8 for the need of “digital books that can be accessed via smartphones.” This indicates that the use of mobile devices has become students’ primary choice in accessing learning media. With 100% of respondents owning personal smartphones in this study, the development of digital media must consider mobile platforms as a priority. Furthermore, literature emphasizes that e-books and digital learning media that are flexibly accessible anytime and anywhere can strengthen learning engagement because they match students’ current digital lifestyle (Çırakoğlu et al., 2022). However, although device access is available, studies also show that unstable internet connectivity or limited data quotas can be significant barriers, this also appears in the findings from teacher interviews (technical constraints). Therefore, digital media design needs to consider offline options or lightweight file sizes so that it remains usable for students with limited data.

The statement “I want the digital book to provide interactive exercises or quizzes” received an average score of 3.5 (“Agree”), slightly lower than the other aspects. This indicates that although students agree with the provision of interactive features, the level of agreement is slightly lower compared to other features. This may mean that students are not yet very familiar with or fully aware of the benefits of interactive exercises/quizzes in digital media. In the literature, interactive features such as quizzes and audio are considered key elements in interactive e-books for improving students’ comprehension, retention, and motivation such as studies that show significant improvements in story comprehension when using interactive e-books (Daulay et al., 2022). Therefore, the development of this media should provide initial training or orientation for students so they can fully utilize the exercises/quizzes and recognize their benefits.

Findings from teacher interviews revealed that one of the main barriers in the use of digital media is that “Not all students have stable internet access.” This becomes a critical factor to consider in implementing digital folktale books in vocational schools. Smartphone availability is indeed high, but internet access quality and regular data quota remain obstacles. The implication for digital learning material development is the importance of providing features that allow offline use or lower data consumption, as well as considering partnerships with schools or internet providers to improve students’ access. Furthermore, although there are technical barriers, teachers also emphasize that attractive visual design and interactive features are key to success, aligned



with theories that learning motivation and student engagement are strongly influenced by media experiences that are well-designed and relevant.

CONCLUSION

Based on the results of the needs analysis conducted through questionnaires and interviews, it can be concluded that students at SMKS Muhammadiyah Rantauprapat have a high level of interest and readiness in utilizing digital books as learning media. The availability of devices, indicated by students' widespread ownership of smartphones and high daily internet access, suggests that the implementation of digital media has strong potential to be executed effectively. In addition, students highly expect digital folktale books that are interactive, visually appealing, easily accessible via smartphones, and contain relevant content such as moral values and local cultural elements, making the learning experience more meaningful and enjoyable. On the other hand, teacher interviews reveal the existence of technical barriers related to limited data quotas and unstable internet access for some students, thus requiring a media design that is efficient and enables offline accessibility. Teachers also emphasize the importance of integrating interactive features such as quizzes and audio to enhance material comprehension and increase students' learning motivation. Therefore, the development of digital folktale books for vocational high school students must carefully consider user needs, technical feasibility, and cultural relevance so that the resulting media can effectively support the learning process.

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