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Development of a Transvisual Cardboard Wayang E-Book on the Situ Bagendit Folktale to Enhance Creativity and Student Engagement in Grade VIII at SMPN 4 Garut

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ABSTRACT

This study aims to develop an interactive e-book for transvisual cardboard wayang learning based on Project-Based Learning (PjBL), utilizing the Situ Bagendit folktale as a source of local Garut cultural content. Employing a Research and Development (R&D) approach with the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation), the analysis phase revealed the need for innovative media to foster junior high school students' creativity and cultural appreciation. The design phase outlined the e-book framework, integrating narrative text, illustrations, audio, video tutorials, and digital worksheets aligned with transvisual PjBL steps. The e-book was developed using the Heyzine Flipbook platform, combining cultural narratives, digital visuals, and creative project activities based on recycled materials. Expert validation from content specialists, media experts, and cultural arts practitioners yielded an average score of 4.7 (very feasible category). A limited trial with 28 Grade VIII students at SMPN 4 Garut produced highly positive responses, averaging 94.8% (excellent category), particularly in attractiveness, creativity, collaboration, and local cultural appreciation. Observations indicated significant improvements in student engagement, with an average score of 3.81 (95.3%), confirming the e-book's effectiveness in nurturing creativity, collaboration, and cultural awareness. Overall, the Transvisual Cardboard Wayang E-Book on the Situ Bagendit Folktale is deemed feasible, practical, and effective as a project-based cultural arts learning medium that integrates local wisdom, digital technology, and 21st-century skills, aligning with the Merdeka Curriculum direction.

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1. INTRODUCTION

The advancement of technology and the demands of 21st-century curricula have necessitated innovation in cultural arts education, particularly at the junior high school (SMP) level. The Merdeka Curriculum emphasizes project-based learning, character strengthening, and student creativity development as core competencies to be mastered. However, actual cultural arts teaching practices in junior high schools (SMPs) remain dominated by conventional teacher-centered methods that minimally engage students actively (Özkan, 2023). This situation results in low student engagement, declining learning motivation, and weakened appreciation of local cultural values amid the rapid currents of globalization and digitalization.

The Project-Based Learning (PjBL) model has proven effective in enhancing students' creativity, collaboration, and critical thinking skills in visual arts education. Research by Fitri et al. (2024) demonstrates that PjBL strengthens cognitive, psychomotor, and 21st-century skill outcomes. Meanwhile, cardboard wayang as a creative recycled-material medium not only trains students' motor skills and imagination but also introduces local cultural values while fostering environmental awareness (Mahamid, 2024). However, the integrated application of these approaches through digital media, such as interactive e-books, remains rare, despite their substantial potential to support active student engagement in cultural arts learning.

Cardboard wayang was selected as the primary medium due to its simplicity, accessibility, and rich educational value. Research by Muthohharoh et al. (2021) found that using cardboard wayang significantly improved elementary school students' storytelling skills. Ediani (2024) developed cartoon wayang media based on local wisdom, which effectively clarified learning materials and cultural values. However, these studies remain focused on the elementary school level and have yet to integrate PjBL with interactive digital media at the junior high school (SMP) level.

To facilitate a more structured learning process, the cardboard wayang medium is packaged as an interactive e-book that guides students step-by-step from familiarizing themselves with folktales, designing patterns, to producing wayang works. The transvisual PjBL model is employed as a pedagogical approach to ensure active student involvement in the creation process, while fostering creativity and group collaboration. In this context, the transvisual concept refers to the transformation of folktale narrative text into cardboard wayang visual representations, involving students' exploration, interpretation, and creative expression (Freedman, 2003).

The Situ Bagendit folktale from Garut, West Java, was selected as the content basis due to its strong character education values and relevance to students' local context. The story recounts Nyai Endit, a wealthy but miserly woman indifferent to the suffering of the poor, who is ultimately cursed and transformed into a lake. The embedded moral values—social empathy, humility, and self-control against greed—align with the dimensions of the Pancasila Student Profile in the Merdeka Curriculum (Damayanti & Jannah, 2024; Qorih & Akbar, 2025).

Numerous studies demonstrate the effectiveness of PjBL in arts education. Anggraeni (2022) reported that PjBL through arts performances enhances student learning motivation. Ginting et al. (2025) conducted a literature review on trends in interactive media-based PjBL, though primarily focused on elementary schools. Nevertheless, research on integrating PjBL with cardboard wayang-based or interactive e-book media at the junior high school (SMP) level remains very limited. Erni et al. (2025) developed PjBL-

based interactive e-books in vocational learning contexts; however, no studies have combined cardboard wayang, transvisual PjBL, interactive e-books, and local folktales at the SMP level.

The novelty of this research lies in the integration of several elements previously under-combined in a single learning product. First, using the Situ Bagendit folktale as the content basis strengthens students' cultural identity. Second, applying transvisual PjBL provides a pedagogical approach emphasizing collaboration, exploration, and creativity in transforming textual narratives into cardboard wayang visuals. Third, utilizing digital media in the form of interactive e-books makes the learning process more flexible and suited to the digital generation at the junior high school (SMP) level. Thus, this study aims to develop and test the feasibility of a recycled cardboard wayang learning e-book based on transvisual PjBL using the Situ Bagendit folktale for Grade VIII students at SMPN 4 Garut.

Project-Based Learning (PjBL) is an innovative learning approach that emphasizes active student engagement through authentic, real-world projects relevant to everyday life. This model positions students as the subjects of learning, while teachers act as facilitators guiding the project process (Kokotsaki et al., 2016). The core principles of PjBL involve connecting learning experiences to authentic contexts, enabling students to construct knowledge through exploration, collaboration, and reflection. Theoretically, PjBL is rooted in constructivist theory, where knowledge is built through active experience (Vygotsky, 1978). PjBL emphasizes "learning by doing," as articulated by Dewey (1938), linking direct experience with reflective thinking processes.

The transvisual concept in PjBL can be understood as the integration of cross-visual representations that facilitate knowledge construction through various art media. Freedman (2003) explains that art education is no longer limited to mere skill in creating works, but rather encompasses transvisual practices involving the transformation of ideas, text, and narratives into visual representations. The transvisual approach provides learners with opportunities to connect learning experiences to cultural, social, and environmental contexts. Eisner's (2002) study shows that visualization processes in art education encourage students to engage in divergent thinking, explore ideas, and develop deeper understanding of cultural values.

Instructional media fundamentally encompasses all forms of tools, materials, or resources used to convey learning messages, thereby facilitating effective learning processes (Heinich et al., 2002). Advancements in digital technology have expanded the concept of instructional media from traditional forms to computer-based, internet, and interactive application formats. Mayer (2014), through the Cognitive Theory of Multimedia Learning, emphasizes that digital media integrating text, images, audio, and video enhances student comprehension by simultaneously engaging verbal and visual channels.

Interactive e-books represent a form of digital instructional media that combines text, images, audio, video, and animation within a single platform, providing a richer learning experience compared to printed books (Woody et al., 2010). The integration of interactive features such as hyperlinks, quizzes, and visual simulations transforms e-books from mere textbook substitutes into experiential learning tools.

Integrating local culture into digital media is a crucial strategy for preserving traditional values while adapting them to the needs of the digital generation. Wayang, as one of Indonesia's traditional performing arts forms, possesses profound cultural, philosophical, and educational value. Using cardboard wayang in cultural arts learning enables students to develop visual arts skills, motor abilities, and appreciation of local wisdom values

simultaneously. Cicah (2024) emphasizes that creative wayang media plays a vital role in clarifying learning materials while internalizing regional cultural values.

2. METHODS

This research constitutes a Research and Development (R&D) study focused on developing an interactive e-book learning medium based on transvisual Project-Based Learning (PjBL). The R&D method was selected as it is appropriate for producing products whose feasibility and effectiveness can be tested through systematic stages (Sugiyono, 2015). This study employs a mixed methods approach with a pragmatic paradigm, combining qualitative methods to gather descriptive data through observation and interviews, and quantitative methods to analyze expert validation results and student responses.



Figure 1. ADDIE model.

The development model employed is the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The ADDIE model was selected due to its practicality and flexibility in developing structured, user-needs-oriented instructional media (Branch, 2009). This model enables dynamic revision and improvement of the product based on evaluation results from each stage.

The research subjects were Grade 8 students at SMP Negeri 4 Garut, Garut Regency, West Java, during the even semester of the 2024/2025 academic year, with 28 students participating in the limited trial. Grade 8 was selected based on the consideration that students possess basic competencies in understanding cultural arts materials and are at an appropriate developmental stage for project-based learning. The research location was chosen because the school has implemented the Merdeka Curriculum, there is a need for innovative cultural arts instructional media, and it aligns with the research objectives focusing on Garut's local wisdom through the Situ Bagendit folktale.

The research procedure followed the five stages of the ADDIE model. The Analysis stage included identifying cultural arts learning needs, curriculum analysis, student characteristics, and the potential of cardboard wayang media based on the Situ Bagendit folktale. The Design stage encompassed developing the e-book content framework integrating text, images, audio, and video; designing the transvisual PjBL-based learning flow; and preparing expert validation instruments, student response questionnaires, and observation guidelines. The Development stage involved creating digital content, integrating it into an interactive e-book format, product validation by content experts, media experts, and cultural arts practitioners, and revising the product based on validator feedback. The Implementation stage consisted of a limited trial of the e-book product with one Grade 8 class at SMP Negeri 4 Garut in a cultural arts learning scenario. The Evaluation stage included analyzing expert validation results, student response questionnaires, student engagement observations, and interviews with teachers and students to assess the medium's feasibility, practicality, and effectiveness.

The instruments used included: (1) expert validation sheets to assess product feasibility from content experts, media experts, and cultural arts practitioners using a 1-5 Likert scale; (2) student response questionnaires to gauge the e-book's attractiveness, ease of use, and

benefits using a 1-4 Likert scale; (3) observation guidelines to record student activities related to participation, creativity, collaboration, independence, and cultural appreciation; and (4) interview guidelines with teachers and students to obtain qualitative data regarding the product's strengths and weaknesses.

Data were collected through expert validation, student response questionnaires, classroom observations, and limited interviews. Data were analyzed quantitatively and qualitatively. Expert validation analysis used the feasibility percentage formula: $P = (\text{Obtained Score} / \text{Maximum Score}) \times 100\%$, with categories: 85-100% (Very Feasible), 70-84% (Feasible), 55-69% (Moderately Feasible), 40-54% (Less Feasible), and <40% (Not Feasible). Student response questionnaire analysis employed descriptive statistics (mean, percentage, standard deviation) with interpretation categories: 3.26-4.00 (Excellent), 2.51-3.25 (Good), 1.76-2.50 (Moderate), and 1.00-1.75 (Poor). Observation analysis utilized achievement percentage calculations and means for each observed aspect. Interview analysis applied thematic analysis techniques through transcription, coding, categorization, thematization, and interpretation stages.

3. RESULT AND DISCUSSION

3.1. Development Process of the Transvisual Cardboard Wayang Learning E-Book

The development of the Transvisual Cardboard Wayang E-Book based on the Situ Bagendit folktale followed the ADDIE model stages, consisting of five main phases: Analysis, Design, Development, Implementation, and Evaluation. Each stage was systematically designed to ensure the resulting product is feasible, effective, and aligned with cultural arts learning needs at the junior high school (SMP) level.

In the analysis stage, learning needs were identified through three main aspects. First, curriculum analysis revealed that the Cultural Arts Learning Outcomes for Phase D in the Merdeka Curriculum emphasize students' ability to express ideas, cultural values, and creativity through two- or three-dimensional visual artworks. All learning outcomes—from exploring visual elements, creating visual works, cultural appreciation, to collaboration in artistic production—align with the needs of transvisual project-based learning (PjBL) developed in this study. Second, student characteristics analysis showed that the majority of Grade 8 students at SMP Negeri 4 Garut (46.7%) have high interest in drawing activities and creating works from recycled materials. Students' learning motivation is generally triggered by hands-on activities producing tangible results. Third, local context analysis demonstrated that the Situ Bagendit folktale from Garut contains moral messages about social empathy, humility, and rejection of greed, which are relevant to student character development.

In the design stage, the e-book content framework was developed, consisting of 10 main sections: cover, foreword, introduction, folktale material, transvisual concepts, cardboard wayang making guide, digital worksheets, assessment rubrics, reflection, and conclusion. The learning flow was structured based on five PjBL stages: (1) determining driving questions, (2) planning the project, (3) executing artwork creation, (4) conducting reflection and revision, and (5) presenting the final works. Each stage was integrated with a transvisual approach emphasizing the transformation of folktale text into wayang visual representations.

In the development stage, digital content was produced including narrative text of the Situ Bagendit story, character illustrations (Nyai Endit and the Old Beggar), audio narration, and 29 cardboard wayang making tutorial videos. Each element was

designed to support multimodal learning appropriate for junior high school (SMP) student characteristics. All content was then integrated into an interactive e-book format using the Heyzine Flipbook platform. The integration process ensured that all media elements could be accessed synchronously and interactively through digital devices such as laptops, tablets, and smartphones.

The developed e-book product was subsequently validated by content experts, media experts, and cultural arts practitioners. Validation results showed an average score of 4.7 (very feasible category). Content expert validation scored 4.7; media expert 4.6; and practitioner 4.8. All validators rated the media as innovative for integrating Garut's local wisdom into contextual digital media, combining transvisual concepts with PjBL methods, and providing multimodal learning experiences. Based on validator feedback, product revisions focused on adding a Sundanese terminology glossary, adjusting worksheet font sizes, shortening tutorial video durations, and including alternative text for accessibility.

Table 1. Expert validation results

Validation Aspect	Content Expert	Media Expert	Practitioner	Average	Category
Content Feasibility	4,7	-	-	4,7	Excellent
Media Feasibility	-	4,6	-	4,6	Excellent
Implementability	-	-	4,8	3,8	Excellent
Total Average	-	-	-	4,7	Excellent

3.2. Implementation of the E-book in Cultural Arts Learning



Figure 2. Teacher introducing the Transvisual Cardboard Wayang e-book in class

Source: Personal documentation

The e-book implementation was conducted through a limited trial over four meetings (each 2 × 40 minutes) with 28 Grade 8B students at SMP Negeri 4 Garut. The activities followed a collaborative approach between the teacher and researcher, where the teacher guided the learning process while the researcher observed student engagement.

The first meeting focused on orientation and e-book introduction. The teacher presented the e-book and explained the project objectives. Students accessed the e-book on their personal devices, read the Situ Bagendit story summary, and discussed its moral values. Students demonstrated high enthusiasm, although some required technical guidance to access the Heyzine Flipbook links.



Figure 3. Students reading the Situ Bagendit story through the e-book
Source: Personal documentation

The second meeting focused on project planning, where students were divided into six groups to select characters and design wayang patterns using digital worksheets. Inter-group member collaboration was observed to be quite high.

The third meeting constituted the cardboard wayang production stage. Students followed the e-book steps: cardboard pulp preparation, head and body formation, and coloring. Most students enthusiastically practiced the tutorial videos independently.



Figure 4. Cardboard wayang making process in the art practice room
Source: Personal documentation

The fourth meeting focused on reflection and project result presentation. Each group displayed their wayang creations and explained the moral messages from the story they visualized. Several groups added improvisational mini-dramas using their created wayang puppets.



Figure 5. Group presentation of works and reflection

Source: Personal documentation

Observation results showed that students demonstrated improved participation, creativity, and reflective abilities toward local cultural values. The teacher assessed that this media facilitated project-based learning more effectively due to systematically organized instructions within the e-book.

3.3. Student Responses and Engagement

Student response questionnaires showed highly positive results with an overall average score of 3.79 (94.8%), falling into the "Excellent" category. The cultural appreciation aspect received the highest score (3.90 or 97.5%), indicating that students felt the media expanded their understanding of Garut's local culture and the moral values in the Situ Bagendit story. The creativity aspect also received high responses (3.86 or 96.5%), where students stated that the e-book encouraged imaginative thinking and producing visual works with personal pride.

Table 2. Student response questionnaire results

No	Assessed Aspect	Average Score	Achievement Percentage (%)	Category
1	Media Attractiveness	3.82	95.5%	Excellent
2	Readability & Display	3.75	93.8%	Excellent
3	Ease of Use	3.70	92.5%	Excellent
4	Material Clarity	3.64	91.0%	Excellent
5	Project Suitability	3.80	95.0%	Excellent
6	Creativity	3.86	96.5%	Excellent
7	Collaboration	3.78	94.5%	Excellent
8	Cultural Appreciation	3.90	97.5%	Excellent
9	General Benefits	3.84	96.0%	Excellent
Total Average		3.79	94.8%	Excellent

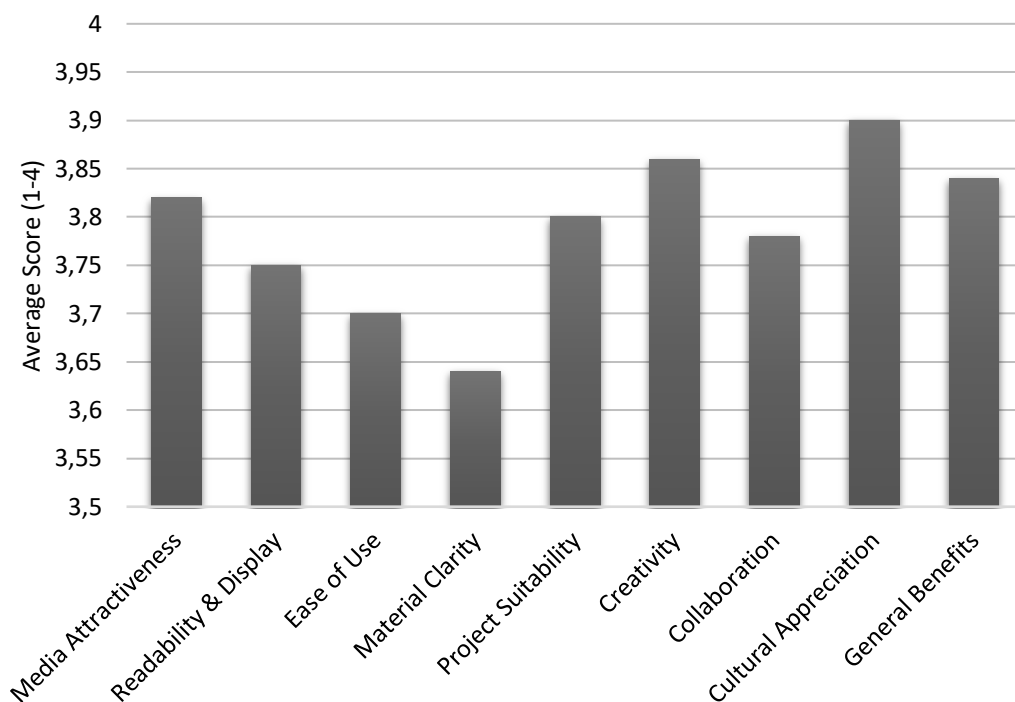


Figure 6. Average student response per aspect

Student engagement observations showed an overall average of 3.81 (95.3%) in the "Excellent" category. The cultural appreciation aspect received the highest score (3.90 or 97.5%), followed by creativity (3.86 or 96.5%), collaboration (3.82 or 95.5%), active participation (3.78 or 94.5%), and independence (3.70 or 92.5%). Most students demonstrated high enthusiasm during the wayang making project. Student creativity was evident in the diversity of wayang forms and colors creations, with each group producing unique character styles. Inter-student collaboration proceeded well with natural role division.

Limited interviews were conducted after completing the Transvisual Cardboard Wayang E-Book based on the Situ Bagendit folktale trial. The interviews aimed to obtain direct feedback from the cultural arts teacher and several Grade 8B students regarding the media's curriculum alignment, ease of use, and learning impacts on creativity, collaboration, and cultural appreciation.

Table 3. Interview results

Respondent	Question	Summary of Response	Key Quote/Code
Cultural Arts Teacher (G-1)	How suitable is the e-book with the school curriculum?	E-book aligns with Merdeka Curriculum learning outcomes, especially creative thinking and cultural appreciation. Cardboard wayang project supports project-based learning.	"This e-book aligns perfectly with P5 and differentiated learning in the Merdeka Curriculum."
	How practical is the media when used in class?	Teacher found media easy to use as accessible from phones and laptops without installation. E-book guidance saved explanation time.	"The step-by-step guidance is clear; I just directed them without repeated explanations."
	How did students respond to learning using this e-book?	Students appeared enthusiastic and more focused during wayang making. They actively discussed and helped each other.	"The kids were far more active and enthusiastic compared to just drawing on paper."
Student (S-3)	What are your impressions of the e-book used?	E-book attractive due to colorful display and Situ Bagendit character images. Story easy to understand.	"Super cool, like reading comics but while learning to make wayang."
Student (S-7)	Was the e-book easy to use?	Very easy to access from phone; no additional apps needed. Videos helped understand wayang making steps.	"The videos are super clear, so I can follow along even at home."
Student (S-11)	Did using the e-book affect your creativity and group work?	Yes, everyone had their own ideas for wayang form and color. They discussed continuously for good results.	"We learned to divide tasks—some cutting, some drawing, some coloring."
Student (S-15)	What cultural values did you gain from the Situ Bagendit story?	Learned importance of not being arrogant and sharing with others. Story similar to modern life.	"Nyai Endit is like people today who like to show off; lesson for me not to be arrogant."
Student (S-20)	Do you think this media helps understand your local culture?	Yes, learned Garut has good stories that can be made into art.	"I only knew Javanese wayang before; now I know Garut stories can be made too."

From the interviews with cultural arts teacher (G-1), information was obtained that the Transvisual Cardboard Wayang e-book media was rated as highly aligned with the Merdeka Curriculum direction, as it emphasizes project-based activities and fosters students' creative and collaborative thinking skills. The teacher assessed this media as practical and easy to use for both teachers and students. The systematic guidance and attractive visual display made the learning process more efficient and enjoyable.

The teacher also stated that student responses were very positive; the classroom atmosphere became livelier and collaborative compared to conventional learning. The wayang making activity was considered effective for cultivating character values such as mutual cooperation and group responsibility.

From interviews with several students, impressions were gathered that the e-book was considered attractive, easily accessible, and different from the media they usually use. Students liked the character illustrations and tutorial videos that helped them understand the wayang making steps. They stated that this media made arts learning feel like "learning while playing" and encouraged the emergence of new creative ideas.

3.4. Discussions

The e-book development process demonstrated strong integration between the ADDIE model stages and transvisual PjBL principles. Each ADDIE stage was not only executed procedurally but aligned with the transvisual approach emphasizing text-to-visual transformation, collaboration, and creative reflection. The analysis stage—covering curriculum, student characteristics, and local context—strengthened relevance to constructivist theory, which emphasizes active learning through authentic, collaborative experiences (Dewey, 1938; Vygotsky, 1978).

The e-book successfully integrated Garut's local cultural values into contextual, interactive digital media. The Situ Bagendit folktale not only contains moral messages relevant to contemporary student life but also aesthetic values that can be visualized into wayang characters. The transmediation process from text to visual form represents transvisual learning practice—transforming ideas, values, and text into meaningful visual expressions (Eisner, 2002; Freedman, 2003).

This product exhibits high innovation by simultaneously integrating three learning dimensions: PjBL pedagogical approach, transvisual art education principles, and local wisdom-based content packaged in interactive digital media. Pedagogically, this research extends PjBL application from general contexts to creative, contextual cultural arts domains. From an instructional media perspective, the novelty lies in the interactive e-book format combining narrative text, illustrations, audio, tutorial videos, and digital worksheets within one platform, creating adaptive multimodal learning experiences suited to digital generation characteristics.

Validation results showed the e-book achieved an average score of 4.7 (very feasible category), meeting all instructional media feasibility dimensions: content substance, technical design, and practical implementability. Product effectiveness was evident from implementation results demonstrating tangible improvements in student participation, creativity, collaboration, and cultural appreciation. Student response questionnaires (94.8%) and engagement observations (95.3%) indicated

very high acceptance levels. These findings validate the ADDIE model and reinforce the assumption that integrating local culture into digital media can expand educational reach in the educational technology era.

4. CONCLUSION

This research successfully developed an interactive transvisual cardboard wayang learning e-book based on the Situ Bagendit folktale that is feasible and effective for Grade 8 cultural arts learning at the junior high school (SMP) level. Development through the ADDIE model produced a product integrating local cultural narratives, transvisual PjBL-based creative project guides, and interactive multimedia, achieving very high feasibility ratings based on validation by content experts, media experts, and cultural arts practitioners. Product implementation demonstrated optimal practicality, with students independently operating the e-book, collaborating in groups, and transvisualizing folktales into cardboard wayang works that reflected understanding of moral values and visual creativity. Student responses and engagement observations showed "Excellent" categories, particularly in creativity, collaboration, and local cultural appreciation aspects, indicating the e-book effectively transforms arts learning from aesthetic activities into reflective experiences that foster cultural identity awareness and moral value internalization. Overall, the e-book proved theoretically and practically feasible and effective in enhancing student creativity, collaboration, and cultural appreciation, demonstrating that integrating local wisdom with digital technology can serve as an innovative cultural arts learning model aligned with Merdeka Curriculum requirements and Pancasila Student Profile development.

Based on these research findings, cultural arts teachers are recommended to utilize the e-book as a primary or supplementary learning medium, adjusting time allocation and providing sufficient reflection opportunities for students. Schools and educational institutions are urged to provide technological facilities support, policy frameworks, and ongoing training to optimize the use of local culture-based digital media and integrate it into Proyek Penguatan Profil Pelajar Pancasila (P5) activities themed around local wisdom and sustainability. Future researchers are recommended to test product effectiveness using experimental designs with larger samples, develop applications with offline mode features to address internet connectivity challenges, add cultural audio elements to enrich transvisual experiences, and apply similar approaches to other cultural arts domains such as traditional music, regional dance, or local crafts to evolve this model into more contextually relevant Indonesian arts education.

5. REFERENCES

- Anggraeni, D. (2022). The effect of project-based learning through art performance on student learning outcomes in arts and culture subjects. *Indonesian Journal of Educational Research and Review*, 5(2), 112-120.
- Branch, R. M. (2009). *Instructional design: The ADDIE approach*. Springer.
- Cicah, Y. (2024). Pengembangan media wayang kreasi untuk pembelajaran seni budaya berbasis kearifan lokal. *Jurnal Pendidikan Seni Rupa*, 8(1), 45-56.
- Chistyakov, A., Tsvetkova, M., & Frolova, E. (2023). Project-based learning in STEAM education: Developing creativity and problem-solving skills. *Educational Technology Quarterly*, 12(3), 234-251.
- Damayanti, R., & Jannah, M. (2024). Nilai moral dalam cerita rakyat Situ Bagendit sebagai

- media pendidikan karakter. *Jurnal Kajian Budaya Nusantara*, 11(1), 78-92.
- Dewey, J. (1938). *Experience and education*. Macmillan.
- Ediani, S. (2024). *Pengembangan media wayang 3D berbasis kearifan lokal Kediri untuk meningkatkan keterampilan bercerita siswa SD* [Doctoral dissertation, Universitas Negeri Malang].
- Eisner, E. W. (2002). *The arts and the creation of mind*. Yale University Press.
- Erni, S., Wibowo, A., & Kusuma, D. (2025). Development of project-based learning interactive e-books in children's clothing courses. *Journal of Vocational Education Technology*, 7(1), 23-35.
- Fitri, A., Rahman, T., & Sari, N. (2024). The project-based learning model and its contribution to student creativity: A review. *International Journal of Educational Innovation*, 9(2), 145-162.
- Freedman, K. (2003). *Teaching visual culture: Curriculum, aesthetics, and the social life of art*. Teachers College Press.
- Ginting, M., Wasino, W., & Widiarti, P. (2025). Trends in interactive media-based project-based learning (PjBL) in elementary education. *Journal of Elementary Education Research*, 10(1), 56-71.
- Graber, K. (2006). Digital technology and cultural preservation: Opportunities and challenges. *Museum Management and Curatorship*, 21(3), 234-249.
- Heinich, R., Molenda, M., Russell, J. D., & Smaldino, S. E. (2002). *Instructional media and technologies for learning* (7th ed.). Merrill Prentice Hall.
- Holm, M. (2011). Project-based instruction: A review of the literature on effectiveness in prekindergarten through 12th grade classrooms. *Rivier Academic Journal*, 7(2), 1-13.
- Kokotsaki, D., Menzies, V., & Wiggins, A. (2016). Project-based learning: A review of the literature. *Improving Schools*, 19(3), 267-277.
- Krajcik, J. S., & Blumenfeld, P. C. (2006). Project-based learning. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (pp. 317-334). Cambridge University Press.
- Mahamid, A. (2024). Wayang kardus sebagai media pembelajaran kreatif untuk melestarikan budaya lokal di Kediri. *Jurnal Seni dan Pendidikan*, 9(2), 112-127.
- Markula, A., & Aksela, M. (2022). The key characteristics of project-based learning: How teachers implement projects in K-12 science education. *Disciplinary and Interdisciplinary Science Education Research*, 4(1), 1-17.
- Mayer, R. E. (2009). *Multimedia learning* (2nd ed.). Cambridge University Press.
- Mayer, R. E. (2014). *The Cambridge handbook of multimedia learning* (2nd ed.). Cambridge University Press.
- Moreno, R., & Mayer, R. E. (2007). Interactive multimodal learning environments. *Educational Psychology Review*, 19(3), 309-326.
- Muthohharoh, I., Santoso, B., & Wulandari, D. (2021). Pengaruh penggunaan media wayang kardus terhadap kemampuan bercerita peserta didik SD. *Jurnal Pendidikan Dasar*, 12(2), 178-189.
- Özkan, Y. (2023). The effect of project-based learning in visual arts lesson on lesson outcomes and attitudes. *International Journal of Education in Mathematics, Science and Technology*, 11(2), 456-478.
- Qorih, S., & Akbar, M. (2025). Pembelajaran nilai kemanusiaan melalui cerita rakyat Situ Bagendit. *Jurnal Pendidikan Karakter*, 13(1), 34-49.
- Rhamadina, S. (2025). Efektivitas e-book interaktif dalam meningkatkan hasil belajar siswa SMP. *Jurnal Teknologi Pendidikan*, 15(1), 67-82.

- Sugiyono. (2015). *Metode penelitian dan pengembangan: Research and development*. Alfabeta.
- Sumarlan, T. (2022). Pengembangan media pembelajaran digital berbasis kearifan lokal untuk meningkatkan apresiasi budaya siswa. *Jurnal Inovasi Pembelajaran*, 8(2), 145-160.
- Supratman, E., & Wahyudin, D. (2021). Integrasi budaya lokal dalam pembelajaran digital: Memperkuat literasi dan identitas budaya siswa. *Indonesian Journal of Curriculum and Educational Technology Studies*, 9(1), 23-37.
- Thomas, J. W. (2000). *A review of research on project-based learning*. The Autodesk Foundation.
- UNESCO. (2015). *Education for sustainable development: Learning objectives*. UNESCO Publishing.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Woody, W. D., Daniel, D. B., & Baker, C. A. (2010). E-books or textbooks: Students prefer textbooks. *Computers & Education*, 55(3), 945-948.
- Zhang, L., Wang, H., & Li, S. (2023). The impact of project-based learning on students' learning outcomes: A meta-analysis. *Educational Research Review*, 38, 100485