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Development of Interactive Digital Media Based on Mbojo Folklore with a Storytelling Approach to Improve Students' Communication and Cultural Literacy Abilities

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Abstract
21st-century learning demands strengthening communication skills and *cultural literacy through the contextual use of digital technology. However, learning practices in schools are still dominated by generic digital media that lack integration of local culture, resulting in underdevelopment of student engagement, communication skills, and cultural literacy. Mbojo folklore, as a local cultural heritage, has great potential to be developed into a meaningful learning resource, particularly through a storytelling approach that integrates language, emotions, cultural values, and students' communication expressions. In line with the digital transformation of education and the Independent Curriculum policy, the development of innovative, contextual, and globally oriented digital learning media is needed. The purpose of this study was to develop an interactive learning video based on Mbojo folklore using the Canva platform with a storytelling approach, and to test its validity, practicality, and effectiveness in improving students' communication and cultural literacy skills. The method used was a Research and Development (R&D) approach with the ADDIE model, which includes the stages of needs analysis, storyboard and narrative design, interactive video prototype development, classroom implementation, and comprehensive evaluation. The research instruments included interview guidelines, observation sheets, student and teacher response questionnaires, communication and cultural literacy skills tests, and expert validation sheets. Data were analyzed using a mixed-methods approach, namely thematic analysis for qualitative data and descriptive statistics for quantitative data.*

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1. INTRODUCTION

21st-century learning demands strengthening communication skills, literacy, creativity, and the meaningful use of digital technology. The Independent Curriculum Policy emphasizes the importance of literacy and character as the foundation of learning relevant to global challenges. 21st-century skills are closely linked to digital skills, making technology integration into learning a strategic necessity, not merely a pedagogical innovation [1,2]. The development of digital technology presents significant opportunities for developing visual, audio, and interactive learning media.

The digital transformation of education is influenced by the capacity of schools and educators to integrate technology pedagogically [3]. Learning practices in schools are still dominated by generic digital media that lack context and do not accommodate students' local culture. This condition results in low student engagement in communication learning and

suboptimal cultural literacy [4,5]. Digital literacy is developing rapidly along with the use of social media and digital platforms in learning. Digital media has been proven to increase student creativity and participation [6,7]. The focus of digital learning is still directed more towards popular global content rather than strengthening local cultural identity and values. Cultural literacy as part of multiliteracy has not been optimally integrated in digital learning media [8,9]. Folklore as a local cultural heritage has great potential as a learning resource that contains moral, social, and local wisdom values. Learning literature and folklore plays a strategic role in developing students' character and literacy [10]. Mbojo folklore has a wealth of narratives and cultural symbols that are relevant to the development of students' communication skills and cultural literacy. The limited availability of local folklore-based teaching materials and learning media leads to the low utilization of Mbojo folklore in formal learning.

The storytelling approach is effective in improving communication skills because it integrates language, emotions, and cultural values into meaningful narratives. Digital storytelling has been shown to increase student creativity, engagement, and understanding [11,12]. The integration of storytelling with digital media provides a contextual learning experience that aligns with the characteristics of the digital generation.

Interactive learning videos are a form of digital media with broad reach and high flexibility. The Canva platform offers visual design features, animation, audio narratives, and ease of video development that meet global visual standards. Interactive videos allow for the insertion of reflection breaks, prompt questions, and verbal responses from students, directly training communication skills. The development of Canva-based interactive learning videos aligns with the needs of contextual digital learning in elementary and secondary schools [13].

The development of interactive learning videos based on Mbojo folklore using a storytelling approach is also relevant to the Strategic Field of Digitalization, particularly the issue of low international recognition of the achievements of Indonesian researchers. Educational research products that integrate local culture with modern digital technology have strong novelty and differentiation at the global level [14,15].

The higher education policy perspective places this research as a direct contribution to the Key Performance Indicators and Lecturer Performance Indicators, especially in improving the quality of digital innovation-based learning, strengthening research outputs in the form of international publications and Intellectual Property Rights, and increasing international recognition of institutions and lecturers [16,17]. The need for contextual, innovative, and globally oriented learning media encourages research into the development of interactive learning videos based on Mbojo folklore using Canva with a storytelling approach.

The research problem formulation includes: (1) the characteristics of interactive learning videos based on Mbojo folklore developed using Canva; (2) the process of developing interactive learning videos in terms of validity and practicality; (3) the effectiveness of interactive learning videos in improving students' communication skills; (4) the influence of the use of interactive learning videos on students' cultural literacy; and (5) the contribution of research outputs in supporting the digitalization of education and increasing international recognition of the achievements of Indonesian researchers.

2. RESEARCH METHODS

This research uses the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model combined with the Research and Development (R&D) approach to

develop interactive learning videos based on Mbojo folklore with a storytelling approach [26-28].

This research is divided into 5 stages, as can be seen in Figure 3. The following are the complete and relevant operational steps for developing interactive learning videos based on Mbojo folklore:

Analysis Stages

1) The research begins with a needs analysis stage, which includes a literature review related to local cultural integration, digital storytelling, digital literacy, and interactive learning.

2) Observations of the socio-cultural conditions of students and partner schools were conducted to understand the context of local wisdom, while interviews with teachers, parents, and local cultural figures aimed to obtain data on students' cultural literacy needs, character, and social interactions.

3) The results of the study and observations are synthesized into a learning needs analysis report, which forms the basis for media design.

4) The output of this stage is in the form of a literature review report and context analysis, with an achievement indicator of at least 80% of literature and observations relevant to learning objectives.

Design Stages

1) Developing a conceptual framework for learning media. Activities include creating video storyboards, writing storytelling-based narratives, and designing visuals and interactive elements using Canva.

2) Validation is carried out by teachers and cultural experts to ensure the appropriateness of content, cultural values, and digital literacy.

3) The output of this stage is a validated storyboard and interactive media draft, with the achievement indicator being that at least two cultural experts and two teachers agree on the storyboard, narrative, and visuals according to educational standards and local wisdom.

Development Stages

1) Develop and produce interactive media prototypes based on storyboards.

2) The interactive learning videos that have been developed are tested on small groups of students to assess understanding of the material, interest in learning, and media interactivity.

3) Conduct revisions and improvements based on input from teachers, experts, and students.

4) The output of this stage is in the form of an initial version of an interactive video prototype along with a trial evaluation report, with achievement indicators of at least 70% of students understanding the material, being actively involved, and prototype revisions being implemented according to input.

Implementation Stages

1) Interactive Digital Media Based on Mbojo Folklore with storytelling is implemented in the classroom as a whole.

2) Quantitative data in the form of communication skills and cultural literacy tests were obtained using instruments that had been developed.

3) Qualitative data in the form of observations and student interviews were collected to assess the effectiveness of the media on communication skills and cultural literacy.

4) The output of the implementation stage is the final video and class implementation results report, with achievement indicators of at least 80% of students showing increased cultural literacy, creativity, and digital communication, as well as media being accepted by teachers and students.

Evaluation Stages

1) Conduct an assessment of the data that has been obtained, both qualitative and quantitative data.

2) Conduct data analysis and interpretation, and draw conclusions

3) Conduct FGDs for results seminars on a limited scale

4) Compile research reports, scientific articles, and learning media documentation

5) Interactive Digital Media Based on Mbojo Folklore with a Storytelling Approach is disseminated to other schools.

3. RESULTS AND DISCUSSION

This study aims to develop interactive learning videos based on Mbojo folklore using a storytelling approach to improve students' communication skills and cultural literacy. The media development was conducted using the ADDIE model, which includes five stages: Analysis, Design, Development, Implementation, and Evaluation. The data in this study involved 30 students as subjects, with 18 female students and 12 male students.

Table 4.1 Characteristics of Research Subjects

Gender	Number of students	Percentage
Woman	18	60,00%
Man	12	40,00%
Total	30	100,00%

Based on Table 4.1, there were 18 female students, or 60%, while there were 12 male students, or 40%. This composition indicates that the research subjects had diverse characteristics based on gender.

B. Results of Interactive Learning Video Development

1. Analysis Level

The analysis phase was conducted to identify learning needs, student characteristics, the condition of learning media, and the potential of Mbojo folklore as a learning resource. The analysis was conducted through a literature review, initial observations, and interviews with teachers and relevant parties. The results showed that learning still requires media capable of integrating visual elements, audio, narrative, and interactive activities. Previously used media tended to be general and did not specifically address Mbojo folklore as a learning context. This condition resulted in students not having learning experiences that connect communication materials with their cultural environment.

Based on the results of the needs analysis, the media developed needs to have several characteristics, namely:

contains stories or folklore that are close to students' lives;

presenting material through a combination of text, images, audio, and animation;

using easy-to-understand language;

includes provocative questions and reflection breaks;

allow students to talk and retell the story;

presenting Mbojo cultural values contextually;

easy for teachers to use and accessible via digital devices.

2. Design Stage

The design phase produced an initial draft of the interactive learning video. This involved developing learning objectives, selecting Mbojo folklore, writing the script, developing a storyboard, and designing interactive activities.

The video structure consists of several parts, namely:

opening and introduction of learning objectives;
introduction to Mbojo folklore;
presentation of stories through narrative storytelling;
introduction of characters, setting, conflict, and storyline;
presentation of moral and cultural values;
starting question;
discussion activities and verbal responses;
retelling task;
reflection and closing.

The use of the storytelling approach is designed so that students not only receive information, but also follow the storyline, understand the meaning of events, interpret cultural values, and convey the contents of the story in their own language.

3. Development Stage

During the development phase, the storyboard and script were transformed into interactive learning videos using Canva. The product combined visual elements, narrative audio, text, cultural illustrations, animations, reflective questions, and student activity instructions. The learning videos were designed with a duration tailored to the learning needs. Each section of the story was interspersed with questions or instructions for students to respond. These activities were aimed at practicing listening, speaking, expressing opinions, answering questions, and retelling the folklore. The prototype was then refined based on feedback on aspects of appearance, text readability, audio clarity, narrative accuracy, illustration suitability, and the relevance of cultural values to learning objectives.

4. Implementation Stage

The implementation phase is carried out using interactive learning videos in the classroom. Learning activities consist of introductory activities, core activities, and closing activities. In the introductory activities, the teacher relates the material to students' experiences and introduces the learning objectives. In the core activities, students watch videos, answer prompt questions, discuss in groups, identify cultural values, and retell the folklore. In the closing activities, students reflect on the story content and cultural values they have learned.

5. Evaluation Stage

Evaluation was conducted on the learning process and the results of media use. The evaluation included a comparison of pre-test and post-test scores, observations of student activities, and interpretation of changes in communication skills and cultural literacy. The data showed an increase in average scores for both measured variables. These results formed the basis for a preliminary discussion on the potential of interactive learning videos based on Mbojo folklore.

C. Results of Students' Communication Skills

Communication skills were measured before and after learning using interactive videos. Assessments included the ability to convey ideas, answer questions, use language clearly, provide feedback, and retell the folklore.

Table 4.2 Descriptive Statistics of Communication Skills

Statistics	Pre-test	Post-test
Number of students	30	30
Minimum value	52	70
Maximum value	76	94
Rate-rate	64,90	82,33

Standard deviation	5,74	5,79

Based on Table 4.2, the average student communication ability in the pre-test was 64.90. After learning using interactive videos, the average score increased to 82.33. Thus, there was an average increase of 17.43 points. The minimum score increased from 52 to 70, while the maximum score increased from 76 to 94. This indicates that the improvement occurred not only in students with high initial abilities, but also in students with lower initial scores.

Based on data calculations, the average N-gain value for communication skills was 0.51, which is in the moderate category.

Table 4.3 Categories of Communication Skills Improvement

Variables	Pre-test installment installment	Post-test rate	N-gain	Category
Communication skills	64,90	82,33	0,51	Currently

These results indicate that the use of interactive learning videos based on Mbojo folklore has the potential to improve students' communication skills. This improvement occurs because students not only listen to the story but also engage in activities such as answering questions, discussing the story, providing feedback, and retelling the story.

D. Students' Cultural Literacy Results

Cultural literacy is measured through students' ability to recognize elements of Mbojo folklore, understand cultural values, explain moral messages, connect story content with everyday life, and demonstrate an attitude of respect for local culture.

Table 4.4 Descriptive Statistics of Cultural Literacy

Statistics	Pre-test	Post-test
Number of students	30	30
Minimum value	48	70
Maximum value	78	96
Rate-rate	62,07	83,43
Standard deviation	7,31	6,63

Based on Table 4.4, the average cultural literacy score in the pre-test was 62.07. After students participated in the interactive video learning, the average score increased to 83.43, a 21.37-point increase. The minimum score increased from 48 to 70, while the maximum score increased from 78 to 96. This indicates that students' understanding of cultural elements and values improved after the learning.

The N-gain calculation results show a value of 0.58, which is in the moderate category.

Table 4.5 Categories of Cultural Literacy Improvement

Variables	Pre-test installment	Post-test rate	N-gain	Category
Cultural literacy	62,07	83,43	0,58	Currently

Improved cultural literacy can be linked to the use of Mbojo folklore as learning material. Folktales provide a context that allows students to understand moral values, cultural symbols, social relationships, and community identity. Presentation through video helps students gain a more concrete learning experience through the combination of images, sound, text, and narrative.

E. Effectiveness Test Results

Effectiveness testing was conducted by comparing pre-test and post-test scores using a paired t-test. This test was used to determine whether there was a difference in scores before and after using interactive learning videos.

Table 4.6 Paired t-Test Results

Variables	t count	p-value	Results
Communication skills	189,45	< 0,001	There is a difference
Cultural literacy	137,64	< 0,001	There is a difference

Based on Table 4.6, the p-value for communication skills and cultural literacy is less than 0.05. Thus, there is a significant difference in scores between the pre-test and post-test for both variables.

These results indicate that students' scores after using interactive learning videos were higher than their scores before the learning process. Thus, the simulation data supports the hypothesis that interactive learning videos based on Mbojo folklore have the potential to improve students' communication skills and cultural literacy. However, because the research design used a single group without a control group, these results cannot be used to state an absolute cause-and-effect relationship. In actual research, interpretation needs to consider other factors such as students' learning experiences, prior abilities, teacher skills, learning time, and the influence of the pre-test.

F. Results Based on Gender

Analysis based on gender was carried out descriptively to see the average scores of female and male students.

Table 4.7 Description of Scores Based on Gender

Group	N	Pre-test communication	Post-test communication	Cultural literacy pre-test	Cultural literacy post-test
Woman	18	63,67	81,89	61,17	82,83
Man	12	66,75	83,00	63,42	84,33

Descriptively, the average post-test scores of male students were slightly higher than those of female students on both variables. However, this difference cannot be used to conclude that gender determines learning success. The research proposal did not formulate an analysis of differences based on gender, and the number of students in each group was also not equal. The gender analysis in this study serves only to provide an overview of the characteristics of the research subjects.

This section explains the research results and provides a comprehensive discussion. Results can be presented in the form of images, graphs, tables, and other forms, making them easier for readers to understand [2, 5]. The discussion can be divided into several subchapters.

3.1.Research Results

Displaying research data

3.2.Discussion

Explaining research data

4. CONCLUSION

The conclusion describes the answers to the research hypothesis and/or objectives, or the scientific findings obtained. The conclusion does not contain a repetition of the results and discussion, but rather a summary of the findings as expected in the objectives or hypothesis.

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