



Development Culture-Based Learning through Audiovisual Media for Prospective History Teachers at Tadulako University

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ABSTRACT

Purpose - This study aims to design a culture-based learning model using audiovisual media to enhance historical understanding and pedagogical competence among prospective history teachers at Tadulako University

Methodology - The research employed a qualitative Research and Development (R&D) approach integrated with cyclical Classroom Action Research (CAR). The process consisted of five stages: needs analysis, design, development, implementation, and evaluation. Data were gathered through classroom observations, semi-structured interviews, and document analysis. The main outputs included short documentaries, narrative podcasts, microlearning videos, and digital archives rooted in Central Sulawesi's local culture. Data were analyzed thematically and validated through triangulation and peer review.

Findings - The results show that integrating audiovisual media into culture-based learning significantly improved students' motivation, engagement, and historical thinking—particularly in evidence analysis, continuity and change, and perspective-taking. Authentic assessment confirmed that most student projects met standards of historical accuracy, multimedia coherence, and ethical cultural representation. Technical disparities were mitigated through peer mentoring, shared resources, and ethical consultation with local communities.

Contribution - The study contributes theoretically by integrating culture-based learning, multimedia principles, and historical thinking into a contextual pedagogical framework. Practically, it enhances teacher candidates' cultural, digital, and pedagogical literacy and offers a replicable model for history education innovation in resource-limited settings.

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INTRODUCTION

The challenges of history education in higher education extend beyond the mastery of chronological content; they also involve developing historical thinking as a core competency for understanding the past (Seixas & Morton, 2013). For prospective history teachers, the ability to contextualize knowledge and interpret evidence critically is essential to maintaining academic rigor while fostering meaningful connections between historical concepts and students' lived experiences (Wineburg, 2018). In Central Sulawesi, cultural assets such as the megalithic sites of Lore Lindu, the oral traditions of the Kaili ethnic group, and the collective memory of the 2018 Palu disaster constitute authentic and rich sources of learning (UNESCO, 2020). Despite their educational potential, these cultural resources have not yet been systematically integrated into the curriculum of history education courses at the university level, particularly in teacher preparation programs (Latif & Ahmad, 2021). The integration of local wisdom into history learning at higher education institutions remains sporadic and largely dependent on individual lecturers, leaving local cultural content unstructured as a systematic component of teacher education curricula (Bhaskara, 2024). Oral traditions and cultural assets of Central Sulawesi, including Kaili narratives, are still more often recommended as supplementary learning resources than formally adopted into the curricula of university history education programs (Misnah, 2019).

The rapid development of technology offers new opportunities to address existing gaps in history education, particularly in making learning more interactive and contextually meaningful (Mayer, 2021). Affordable tools for producing and curating audiovisual media—such as short videos, oral recordings, photographic archives, and interactive maps—enable educators to design instructional resources that are both accessible and engaging (Moreno, 2022). This integration not only enriches content delivery but also empowers students to perceive history as relevant to their immediate cultural and social environment (Gay, 2018; Banks, 2020).

From this perspective, the integration of audiovisual media into culture-based learning is not merely a pedagogical innovation but also a strategic response to the demands of 21st-century education. It aligns with the principles of multimodal literacy, which emphasize the ability to interpret and create meaning across multiple media forms (Jewitt, 2017; Kress, 2021). Furthermore, it equips prospective teachers with practical skills in media production and digital curation—competencies that are essential as they enter partner schools and adapt to the increasingly digital learning environments of secondary education (Selwyn, 2016; Buckingham, 2019; Mishra & Koehler, 2023).

In this study, the developed audiovisual medium took the form of a locally grounded historical documentary video that integrates authentic visual materials—such as cultural heritage sites, artifacts, historical landscapes, and community social practices—with structured historical narration that emphasizes spatial and temporal contexts. This form of audiovisual media was selected based on the understanding of history as an interpretative discipline constructed through narrative and evidence; accordingly, documentary videos are particularly effective in supporting students' contextual and meaningful engagement with past events when visual materials are positioned as historical sources for critical analysis rather than as illustrative supplements (Marcus & Stoddard, 2021). Recent empirical studies in history education demonstrate that documentary-based learning, when embedded within guided analysis and discussion activities, enhances conceptual understanding, learner engagement, and the development of historical thinking skills more effectively than text-centered instruction alone (McCall, 2022). The pedagogical value of digital and audiovisual media in history learning is further strengthened when such media are intentionally designed as components of historical inquiry, enabling students to formulate questions, examine sources, and construct evidence-based interpretations of the past (Hofer & Swan, 2020). Moreover, integrating audiovisual sources into history instruction provides preservice teachers with essential professional learning experiences related to the critical selection, pedagogical use, and reflective integration of digital media within culturally responsive teaching contexts (Doolittle & Hicks, 2023).

Three central research questions guide the present study: 1) What theoretical foundations support the integration of local culture into history learning through audiovisual media? 2) What instructional design

model is most appropriate for the specific context of Universitas Tadulako?) How can implementation scenarios, assessment instruments, and cyclical reflection mechanisms be developed to ensure measurable impact on the competencies of prospective teachers?

These questions serve as the backbone for developing a conceptual framework and instructional design model that are both contextually relevant and pedagogically sound. The primary objective of this initiative is to construct a comprehensive framework encompassing conceptual underpinnings, audiovisual media design, a semester-long implementation roadmap, authentic assessment instruments, and a sustainable evaluation mechanism for culture-based history learning. Through this process, the study seeks to provide a replicable model that can inform not only local practices at Universitas Tadulako but also broader discussions on the role of culture and media in history education across Indonesia (Suyatno, 2022; Mahfud & Latief, 2023).

Several national and institutional priorities reinforce the urgency of this project. First, it directly contributes to the development of the *Profil Pelajar Pancasila*, which emphasizes cultural rootedness, global competence, and lifelong learning (Kemdikbudristek, 2021). Second, it addresses the imperative of digital literacy, equipping students and prospective teachers to engage critically and creatively with digital media (Buckingham, 2019; Warschauer & Matuchniak, 2022). Finally, it responds to curricular reforms at the secondary school level that increasingly emphasize the importance of local contexts as entry points for historical inquiry (ASEAN Secretariat, 2022; Yuliani & Raharjo, 2021). For teacher candidates, the ability to produce and effectively use audiovisual media enriches their pedagogical repertoire and enhances their capacity to design culturally grounded, engaging, and student-centered learning experiences (Gay, 2018; Banks, 2020).

In sum, the proposed model of culture-based learning through audiovisual media offers both theoretical significance and practical utility. It strengthens historical thinking, promotes cultural literacy, and prepares future teachers with pedagogical and technological competencies suited to contemporary educational challenges (Mayer, 2021; Mishra & Koehler, 2023).

Despite the growing body of research on culture-based learning and the pedagogical use of audiovisual media in history education, several theoretical and developmental gaps remain inadequately addressed, particularly in higher education and teacher preparation programs.

Previous studies have demonstrated that integrating local culture into learning enhances student engagement and strengthens cultural identity (Gay, 2018). Audiovisual media have also been shown to support contextual understanding through meaningful visual and auditory representations (Mayer, 2021). Culture-based education further contributes to multicultural awareness and social relevance in history learning (Banks, 2020). However, existing research primarily focuses on classroom implementation at the primary and secondary levels and emphasizes learning outcomes rather than the systematic development of instructional media in teacher education programs (Levstik & Barton, 2015). Moreover, audiovisual media are often treated as supplementary tools, without being grounded in structured instructional design frameworks that ensure alignment among objectives, cultural content, pedagogy, and assessment (Selwyn, 2016; Mishra & Koehler, 2023).

From a theoretical perspective, while history education highlights the importance of historical thinking skills, their integration with local culture and audiovisual media remains underexplored within a comprehensive development model (Wineburg, 2001). Addressing this gap, the present study develops culture-based audiovisual learning media using the ADDIE model for prospective history teachers. The novelty of this research lies in positioning local culture as core instructional content systematically embedded across all ADDIE phases, while simultaneously strengthening preservice teachers' competencies in instructional design, audiovisual media production, and culturally responsive pedagogy (Gay, 2018).

In line with the research objective that emphasizes a development-oriented approach, this study employs a research and development (R&D) methodology by applying the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) as the framework for developing culture-based learning through audiovisual media. The ADDIE model was selected because it provides a systematic and flexible

structure for analyzing needs, designing, developing, implementing, and evaluating learning products in accordance with the context and characteristics of prospective teacher students.

METHODOLOGY

Research Design

This study employed a qualitative research and development (R&D) design using the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) as the primary framework for developing culture-based learning through audiovisual media for prospective history teachers. A qualitative orientation was adopted to allow an in-depth exploration of how local cultural content and audiovisual media were conceptualized, designed, and implemented within authentic higher education learning contexts.

The ADDIE model provided a systematic yet flexible structure to guide the development process. At the same time, iterative reflection and formative evaluation were embedded throughout the implementation and evaluation phases to refine the instructional model in line with classroom realities. Rather than adopting a formal Classroom Action Research (CAR) design, this study emphasized context-sensitive reflection on teaching-learning processes as part of developmental evaluation. This approach enabled the study not only to produce a theoretically grounded instructional model but also to ensure its practical relevance and adaptability for teacher education settings. Consistent with qualitative inquiry, the research prioritized interpretation, meaning-making, and collaborative reflection between lecturers and students over experimental measurement.

Participant

The study was conducted in the History Education Program at Universitas Tadulako and involved 24 third- and fourth-year undergraduate students preparing to become history teachers. Of these participants, 14 were female, and 10 were male, drawn from two intact classes enrolled in history education courses. Participants were selected purposively, as they represented the cohort most relevant to the study's developmental objectives, particularly in relation to the acquisition of pedagogical competence and culturally responsive instructional design skills.

The inclusion criteria comprised: (1) active enrollment in the History Education Program, (2) completion of foundational courses in pedagogy and history teaching methods, and (3) willingness to participate consistently in all stages of the learning development and implementation process. Students who did not attend learning activities regularly or failed to complete required learning tasks and reflective activities were excluded from the study.

The students' involvement extended beyond that of conventional research subjects; they were engaged as active participants in the development process through structured learning activities, reflective discussions, and feedback on the audiovisual learning media. Their perspectives contributed to refining the instructional model during the development and implementation phases of the ADDIE framework.

The lecturer-researchers assumed multiple roles as facilitators, observers, and reflective practitioners during the implementation process. Their role focused on guiding learning activities and conducting formative reflection on the instructional design rather than evaluating students' academic performance. This participatory arrangement fostered a reflective, collaborative learning environment consistent with the principles of qualitative research in higher education settings.

Data Collection

Data were collected using naturalistic and interactive methods consistent with qualitative inquiry and a development-oriented research design. Classroom observations were conducted during learning activities to document students' engagement, collaborative interactions, and use of audiovisual media in relation to historical inquiry and local cultural content. These observations focused on how students interacted with visual sources, discussed historical interpretations, and integrated cultural perspectives into their learning.

Semi-structured interviews were carried out with both students and lecturers to explore their perceptions of the relevance, usability, and pedagogical value of the culture-based audiovisual learning model, as well as the challenges encountered during its implementation. The interviews were designed to capture participants' reflective experiences and to inform formative evaluation of the instructional design.

In addition, document analysis was conducted on students' learning artifacts, including audiovisual assignments, reflective journals, and course-related learning products. These documents were examined to identify evidence of students' historical reasoning, engagement with local cultural contexts, and the ways audiovisual media supported their understanding of historical content. Data collection occurred continuously over one academic semester, enabling prolonged engagement with the research setting and enhancing the credibility of the qualitative findings.

Instrument

To support data collection, a set of complementary research instruments was employed. Observation guidelines were developed to direct attention to relevant classroom interactions, including student engagement, collaborative learning processes, and the use of audiovisual media within historical inquiry activities. Semi-structured interview guides were designed to facilitate open, flexible conversations with students and lecturers, enabling participants to articulate their experiences, perceptions, and reflections on the culture-based audiovisual learning model.

Reflective journal templates were provided to students to document their personal learning experiences, challenges encountered, and self-assessment of their engagement with historical content and local cultural contexts. In addition, assessment rubrics were collaboratively developed with course lecturers to examine students' audiovisual projects, focusing on historical accuracy, conceptual understanding, creativity, and ethical representation of local culture. These rubrics functioned as formative evaluation tools rather than summative measures.

All instruments were designed to remain flexible and open to refinement throughout the research process, in line with the emergent, iterative nature of qualitative inquiry. Instrument validation was conducted through peer discussion and expert review involving history education scholars and instructional design specialists to ensure clarity, relevance, and cultural sensitivity.

Data Analysis

Observation notes, interview transcripts, reflective journals, and audiovisual learning artifacts were analyzed using an inductive thematic analysis approach. The analysis process involved iterative reading, open coding, and the grouping of codes into broader categories to identify recurring patterns and emerging themes related to students' learning motivation, historical thinking skills, and cultural literacy development. These themes were continuously refined through comparison across data sources and aligned with the study's developmental objectives for prospective history teachers.

FINDINGS

Analysis

The needs analysis phase revealed several fundamental conditions that served as the foundation for the development of culture-based audiovisual learning media in history education at Universitas Tadulako. Data obtained through classroom observations, focus group discussions, semi-structured interviews with students and lecturers, and local cultural resource mapping indicated a strong need for instructional materials that systematically integrate local cultural heritage into history learning at the higher education level.

First, the findings show that history instruction remains predominantly textbook-based and lecturer-centered, with limited use of local cultural sources. Second, the needs analysis identified a gap in the availability of instructional media that support the development of historical thinking skills through contextual learning experiences. Students reported difficulties in understanding abstract historical concepts — such as continuity and change, cause and consequence, and historical perspective — when learning relied

primarily on written sources. Third, the findings indicate that prospective history teachers lack structured experience in designing and utilizing audiovisual media for pedagogical purposes. Fourth, the mapping of local cultural resources demonstrates that the environment surrounding Universitas Tadulako offers abundant and readily accessible historical learning resources.

Overall, the needs analysis results indicate a strong interconnection among pedagogical, cultural, and technological needs in history learning, underscoring the urgency of developing a culture-based audiovisual learning model that responds to these intersecting demands.

Table 1. Summary of Needs Analysis

Aspect Analyzed	Key Findings	Development Implications
History learning practices	Textbook-based materials and lecturer-centered explanations dominate instruction; local culture has not yet been positioned as core content.	Learning media are needed that position local culture as a primary source of instruction.
Historical thinking skills	Students experience difficulties in understanding abstract concepts (continuity, causation, perspective)	Media should support evidence-based analysis and historical contextualization.
Use of learning media	Audiovisual media are not yet used systematically in instruction	A structured audiovisual learning model grounded in instructional design is required
Student competencies	Students lack experience in designing educational audiovisual media	Media development should be integrated with pedagogical skill training
Local cultural resources	Cultural resources are available and easily accessible	Local resources can be transformed into educational audiovisual media

Design

The needs analysis findings outlined in Table 1 informed the subsequent design phase, which focused on translating identified pedagogical, cultural, and technological needs into a coherent instructional framework for culture-based audiovisual history learning.

At this stage, learning objectives were formulated in alignment with the learning outcomes of the history education program, and an inquiry-based instructional structure was designed to integrate the analysis of local cultural sources. The instructional design included classroom activities, collaborative group work, audiovisual-based assignments, and microteaching sessions as a means of pedagogical application.

In addition, instructional media designs were developed in the form of historical documentary storyboards, narrative podcast scripts, historical thinking concept maps, and authentic assessment rubrics. All media designs and assessment instruments were developed in accordance with multimedia learning principles to support conceptual understanding and student engagement. The outcomes of this design phase served as an operational blueprint for the subsequent development and implementation of the learning media.

Development

Following the formulation of learning objectives, activity structures, and media designs in the design phase, the study advanced to the development phase, where the conceptual plans were transformed into functional and contextually grounded culture-based audiovisual learning media.

At the development stage, the instructional design and media blueprints produced during the design phase were transformed into functional culture-based audiovisual learning media for history education. The development process was carried out collaboratively by lecturers and students through media production activities that included field data collection, historical narrative construction, visual and audio recording, and

editing processes. The products developed comprised short historical documentary videos, narrative podcasts, microlearning videos, and simple digital archives containing local cultural sources.

All media were developed using accessible technologies, such as smartphone cameras, basic audio recording devices, and open-source editing software, to ensure that the production process remained realistic and sustainable within the higher education context. Media development was also guided by multimedia learning principles, particularly coherence, segmentation, and visual-auditory signaling, to ensure that the presented content supported conceptual understanding without imposing excessive cognitive load on students.

Throughout this stage, ongoing formative evaluation was conducted through reflective discussions, lecturer feedback, and peer assessment to identify the strengths and limitations of the developed media. The results of these reflections were used to revise the accuracy of historical content, narrative structure, visual and audio quality, and the alignment of the media with learning objectives and local cultural contexts. This development phase resulted in audiovisual learning media ready for piloting and implementation in the subsequent stage.



Figure 1. Development Phase Flowchart

Implementation

The audiovisual media developed in this study were subsequently implemented in history learning activities to observe their use, learning interactions, and students' responses in authentic classroom settings. During the implementation phase, the culture-based audiovisual media were integrated into history education courses within the History Education Program at Universitas Tadulako and applied in a staged manner. The process began with a limited trial during several initial meetings and was followed by full implementation throughout a semester-long learning sequence.

The audiovisual media functioned as primary learning resources to support historical inquiry activities, including the analysis of local cultural sources, discussions based on document-based questions (DBQs), collaborative group work, and media production tasks and microteaching. In this context, students were positioned not only as media users but also as prospective history teachers who engaged in reflective consideration of how culture-based audiovisual media could be effectively applied in school history instruction.

The culture-based audiovisual learning model was implemented through two cycles of Classroom Action Research (CAR). The first CAR cycle indicated that using culture-based audiovisual media increased students' motivation to learn and their participation in history learning activities. Students were actively engaged in

historical inquiry processes, including the analysis of local cultural sources, document-based discussions, and the initial production of audiovisual learning media. However, the first cycle also revealed several challenges, including inconsistencies in historical narratives, variations in the technical quality of media products, and uneven collaboration among group members.

The second CAR cycle demonstrated significant improvements following revisions to the instructional design and media products. Students exhibited stronger historical thinking skills, particularly in evidence analysis, perspective-taking, and contextual interpretation of local history. The quality of the audiovisual media also improved, as reflected in more coherent narrative structures, better integration of visual and audio elements, and closer alignment with instructional objectives. In addition, students showed greater confidence in reflecting on the pedagogical use of audiovisual media as prospective history teachers.

The key findings from Cycle 1 and Cycle 2 are summarized in Table 2 to highlight the progression and improvements observed during the implementation.

Table 1. Comparative Summary of Learning Outcomes Across CAR Cycles

Aspect Analyzed	Key Findings	Development Implications
Student engagement	Students began to show interest in using culture-based audiovisual media; however, participation was uneven across groups.	Student engagement increased significantly; discussions, group work, and inquiry-based activities became more active and collaborative.
Learning motivation	Learning motivation improved compared to conventional instruction, but was still influenced by technical limitations and low self-confidence.	Learning motivation became more stable and consistently high; students demonstrated enthusiasm and a sense of ownership of the learning project.
Quality of historical thinking	Students were able to identify historical evidence and context, but analysis remained primarily descriptive.	Students demonstrated deeper analysis of evidence, stronger understanding of continuity and change, and the ability to adopt multiple historical perspectives.
Quality of audiovisual media	Media products varied in terms of historical accuracy, narrative structure, and visual-audio quality.	Audiovisual media showed substantial improvement in narrative coherence, visual-audio integration, and historical content accuracy.
Group collaboration	Collaboration among group members was not yet optimal; role distribution remained uneven.	Group collaboration became more effective, with more precise role distribution and stronger teamwork.
Pedagogical reflection	Students began to reflect on the role of media as a learning support tool.	Students were able to critically reflect on the use of audiovisual media as prospective history teachers.
Main challenges	Technical constraints, inconsistencies in historical narration, and limited experience in media production	Technical challenges were reduced; focus shifted toward pedagogical refinement and ethical representation of cultural content.
Follow-up actions	Revision of instructional design, technical scaffolding, and strengthening of task structure were required.	The instructional model was considered more mature and ready for sustainable implementation.

Evaluation

The evaluation phase involved a comprehensive assessment of the effectiveness of the culture-based audiovisual learning model developed and implemented through two cycles of Classroom Action Research

(CAR). This phase aimed to examine the extent to which the instructional objectives were achieved, the quality of the audiovisual media, and the model's impact on the development of prospective history teachers' pedagogical competence, historical thinking skills, and digital literacy.

Evaluation was conducted through a combination of formative and summative approaches. Formative evaluation took place throughout the development and implementation processes, incorporating lecturer feedback, student reflections, peer assessment, and reflective discussions conducted at the end of each CAR cycle. In contrast, summative evaluation was conducted at the end of the semester by analyzing pre-test and post-test results, students' audiovisual media portfolios, authentic assessment rubrics, and classroom observation records.

The evaluation results indicate that the developed learning model effectively enhanced student engagement, historical thinking skills, and the ability to design and utilize audiovisual media in pedagogically meaningful and context-sensitive ways. The audiovisual products met the feasibility criteria for historical accuracy, narrative coherence, multimedia design, and ethical representation of local culture. In addition, the evaluation process identified areas for further refinement, particularly the need to strengthen technical production guidelines and to deepen students' pedagogical reflection.

DISCUSSION

The findings of this study indicate that integrating culture-based audiovisual media into history education enhances students' historical thinking by providing multiple opportunities to analyze, interpret, and contextualize evidence. Historical thinking requires learners to interpret and construct meaning from diverse sources rather than merely recall factual information, and recent research suggests that active engagement with digital and multimedia resources can strengthen these higher-order skills in educational settings (López-García *et al.*, 2023). Furthermore, this study shows that when students are guided to analyze audiovisual representations of local cultural heritage, they demonstrate enhanced abilities to connect historical evidence to broader sociocultural contexts, which aligns with contemporary conceptions of historical thinking as a complex blend of cognitive processes (Miralles-Sánchez *et al.*, 2023). In addition to cognitive development, the implementation of culture-based audiovisual media also appears to reinforce pedagogical competence among prospective history teachers, as they engage in designing, producing, and reflecting on instructional artifacts. This practice supports culturally responsive pedagogy in higher education (Hutchison & McAlister-Shields, 2020). Such pedagogical integration situates historical inquiry within familiar cultural contexts, thereby enhancing both deep learning and professional readiness for future classroom practice.

Following the discussion of cognitive outcomes, it is essential to examine the affective dimensions of the model, particularly in relation to student engagement and motivation. The findings indicate that integrating local culture into audiovisual media not only enhanced students' conceptual understanding of historical content but also fostered a strong sense of ownership over the learning process and its products. When students worked with narratives drawn from their own cultural environment—such as local oral traditions, megalithic heritage sites, and community memories—they were not merely completing academic assignments; instead, they were participating in the representation and reinterpretation of their own cultural identity. This personal connection strengthened their emotional investment and commitment to producing meaningful and responsible historical work.

This affective strengthening aligns with contemporary multidimensional perspectives on student engagement, which conceptualize engagement as consisting of behavioral, emotional, and cognitive dimensions (OECD, 2023). In the present study, behavioral engagement was reflected in increased participation in discussions, collaborative group work, and active media production. Emotional engagement emerged through students' enthusiasm, pride, and heightened interest in culture-based projects. Cognitive engagement was evident in their sustained effort to refine historical narratives, analyze evidence more critically, and improve the quality of audiovisual outputs. The use of audiovisual media played a crucial role in stimulating participation, positioning students not merely as recipients of information but as creators of

knowledge. This shift from passive consumption to active production enhanced students' sense of agency and responsibility within the learning process.

Therefore, the impact of the model extends beyond cognitive gains in historical thinking to include significant affective development. The integration of local culture and audiovisual media created a learning environment that was personally meaningful, socially relevant, and academically rigorous. In doing so, the study demonstrates that effective history education should address not only analytical competencies but also sustained motivational and emotional engagement.

After discussing the cognitive and affective impacts of the model, it is essential to examine how the methodological design—particularly the integration of Research and Development (R&D) with Classroom Action Research (CAR)—contributed to the systematic refinement of the instructional model. The findings indicate that the first cycle did not yet produce optimal learning quality. Although improvements in student motivation and participation were observed, several limitations remained, including inconsistencies in historical narratives, variations in the technical quality of audiovisual products, and uneven collaboration among group members. These conditions highlight that pedagogical innovation rarely reaches its ideal form in a single implementation phase; instead, it requires structured reflection and iterative improvement.

The significant improvements observed in the second cycle demonstrate the essential function of Classroom Action Research (CAR) as a systematic mechanism for reflective refinement. After identifying limitations in Cycle 1, revisions were introduced in the instructional design, including more explicit task sequencing, strengthened scaffolding of historical inquiry skills, and enhanced technical mentoring in media production. These adjustments contributed to measurable gains in narrative coherence, analytical depth, and collaborative performance. Such iterative progression reflects contemporary perspectives on critical participatory action research, which emphasize the cyclical integration of planning, action, observation, and reflection to generate sustainable pedagogical improvement (Kemmis et al., 2020).

Within this framework, research is not merely a process of data collection but a transformative practice that simultaneously enhances professional action and generates contextualized knowledge. During the initial implementation, lecturers and students engaged in real-time reflection on emerging instructional challenges (*reflection-in-action*), followed by systematic evaluation after the cycle concluded (*reflection-on-action*). Importantly, these reflections were not confined to descriptive evaluation but were translated into concrete revisions of instructional strategies and media design. The improvements evident in Cycle 2, therefore, were not incidental but rather the logical outcome of a structured reflective process embedded within the research design.

The integration of R&D and CAR in this study demonstrates that instructional model development is not linear but iterative and adaptive to classroom realities. While the ADDIE framework provided a systematic structure for analysis, design, development, implementation, and evaluation, CAR functioned as a formative evaluative layer that enabled contextual adjustment and pedagogical refinement. This hybrid approach strengthened the model's practical validity, as each revision was grounded in empirical evidence derived from authentic classroom practice. In other words, the methodological integration was not merely declarative but operationally effective in producing a more mature, context-sensitive, and sustainable culture-based audiovisual learning model.

Conceptually, these findings reinforce the argument that innovation in teacher education requires sustained collaborative reflection. Without iterative cycles of reflection and revision, instructional development risks remaining product-oriented rather than pedagogically transformative. The role of CAR in this study was therefore not supplementary but integral, ensuring that the integration of local culture and audiovisual media led to genuine instructional transformation rather than superficial innovation.

After examining the role of CAR in refining the model, the discussion turns to its broader implications for teacher education. The findings suggest that the culture-based audiovisual learning model is highly relevant to preservice teacher preparation, particularly in contexts seeking to integrate pedagogy, content knowledge, technology, and cultural responsiveness within a coherent instructional framework. Rather than

treating these domains as separate competencies, the model demonstrates how they can be operationalized in an integrated and practice-oriented manner.

From the perspective of teacher knowledge frameworks, the model aligns strongly with the Technological Pedagogical Content Knowledge (TPACK) framework, which emphasizes the intersection of content knowledge, pedagogical knowledge, and technological knowledge as the core of effective teaching in digital contexts (Mishra & Koehler, 2006). In this study, preservice history teachers were not merely exposed to digital tools; they were required to design culturally grounded historical narratives using audiovisual media, thereby operationalizing TPACK in authentic practice. This integration moved beyond technical proficiency toward pedagogically meaningful technology use. Recent scholarship further emphasizes that teacher education programs must embed digital competence within subject-specific pedagogy rather than offering isolated technology courses (Tondeur et al., 2020). The model developed in this study responds directly to that call by situating media production within the epistemological structure of historical inquiry.

In addition, the model resonates with frameworks of culturally responsive teacher education. Culturally responsive pedagogy requires teachers to recognize, value, and incorporate students' cultural backgrounds into the learning process (Gay, 2018). However, teacher preparation programs often struggle to translate this principle into concrete instructional design practices. The present model offers an operational pathway by positioning local culture not as supplementary content but as a primary source for historical inquiry and media production. This approach aligns with the broader vision of culturally sustaining pedagogy, which emphasizes the preservation and critical engagement with local cultural knowledge within formal education (Paris & Alim, 2017). By engaging directly with community narratives, heritage sites, and oral traditions, preservice teachers develop both cultural sensitivity and ethical awareness—competencies essential for teaching in pluralistic societies.

Through activities such as storyboard design, documentary production, DBQ facilitation, and microteaching simulations, students engaged in approximations of real teaching practice. These experiences enabled them to rehearse instructional decision-making, receive feedback, and revise their designs—processes central to professional learning. In this regard, the model not only fosters historical thinking but also strengthens the formation of professional identity among preservice teachers.

The model's replicability also merits attention. Although developed within the specific cultural context of Central Sulawesi, the model's structural logic—needs analysis, culturally grounded design, iterative development, reflective CAR cycles, and authentic assessment—is adaptable to other contexts. The key principle lies not in the specific cultural content used, but in the systematic integration of local cultural resources into disciplinary inquiry through multimedia design. Research on context-responsive teacher education underscores that models are most transferable when they provide a flexible framework rather than rigid prescriptions (Darling-Hammond et al., 2017). The hybrid ADDIE-CAR structure employed in this study offers such flexibility, allowing adaptation to diverse institutional settings while preserving methodological rigor.

In sum, the implications for teacher education extend beyond the immediate instructional outcomes observed in this study. The model demonstrates how teacher preparation can move toward a more integrated paradigm—one that bridges disciplinary thinking, technological fluency, cultural responsiveness, and reflective practice. By embedding these domains within a coherent developmental framework, the study offers a practical, theoretically grounded contribution to contemporary debates on preparing teachers for culturally diverse, digitally mediated educational environments.

As a balanced scholarly discussion requires critical reflection, it is important to acknowledge several limitations of this study and outline recommendations for future research. Recognizing these limitations does not weaken the study; instead, it situates the findings within their appropriate scope and strengthens their academic credibility.

First, the study was conducted within a specific local context—namely, the History Education Program at Universitas Tadulako, with cultural resources drawn primarily from Central Sulawesi. While this contextual

grounding is a strength in terms of cultural authenticity, it also limits the generalizability of the findings. The particular sociocultural dynamics, institutional support, and accessibility of local heritage resources available in this setting may influence the effectiveness of the culture-based audiovisual model. Teacher education research increasingly emphasizes the importance of context in shaping instructional innovation, suggesting that educational models must be interpreted within their sociocultural environments rather than assumed to be universally transferable (Cochran-Smith et al., 2020). Future studies could test the model in different regional or national contexts to examine its adaptability across diverse cultural landscapes.

Second, the sample was relatively small, comprising a cohort of third- and fourth-year preservice history teachers within a single program. Although the qualitative design prioritized depth of engagement and iterative refinement, the modest sample size constrains broader claims regarding impact. Expanding implementation across multiple cohorts or institutions would enable comparative analysis and potentially more robust statistical examination of learning gains. Broader sampling would also enable researchers to explore how variations in prior digital competence, academic background, or cultural familiarity influence outcomes. Scaling up research in teacher education has been identified as crucial for bridging the gap between localized innovation and systemic reform.

Third, the duration of implementation – although spanning one semester – remains limited in assessing long-term impact. The findings demonstrate improvements in historical thinking, motivation, and pedagogical competence within the intervention period; however, it remains unclear whether these competencies are sustained as students transition into professional teaching contexts. Longitudinal research following graduates into their early teaching careers would provide more substantial evidence regarding the durability and transferability of competencies developed through the model. Studies on teacher learning suggest that sustained professional growth often requires continued reflection and institutional support beyond initial preparation programs.

In light of these limitations, several recommendations emerge. Future research should (1) replicate the model across varied institutional and cultural contexts to examine its adaptability; (2) incorporate larger and more diverse participant samples to strengthen empirical generalization; and (3) conduct longitudinal studies to assess the long-term influence of culture-based audiovisual learning on professional teaching practice. Additionally, further investigation could explore integrating the model into school-based practicum experiences to strengthen coherence between university coursework and classroom realities.

By articulating these limitations and forward-looking directions, the study maintains methodological transparency while opening pathways for continued scholarly development in culture-based and technology-integrated teacher education.

CONCLUSION

This study confirms that the development and implementation of a culture-based audiovisual learning model, structured through the ADDIE framework and strengthened by iterative CAR cycles, effectively enhances the historical thinking skills, pedagogical competence, and engagement of prospective history teachers. The findings demonstrate that when local cultural heritage is positioned as core instructional content and integrated with inquiry-based activities and multimedia principles, students show measurable improvement in evidence analysis, perspective-taking, and contextual interpretation of historical events.

From a conceptual standpoint, this research contributes a coherent developmental model that bridges four major domains in teacher education: historical thinking, culturally responsive pedagogy, multimedia learning design, and reflective practice. By embedding local culture systematically across the phases of analysis, design, development, implementation, and evaluation – while refining the model through cyclical reflection – the study moves beyond fragmented instructional innovation. It offers a structured, theory-informed framework for educational development.

In practice, the model provides a replicable approach for higher education institutions seeking to integrate culture, technology, and pedagogy into teacher preparation programs. It demonstrates that

accessible technologies, collaborative production processes, and structured reflection can empower preservice teachers not only to understand history more deeply but also to design meaningful, culturally grounded, and digitally supported learning experiences.

In conclusion, integrating culture-based audiovisual media through a systematic, reflective design process offers a viable, transformative pathway to strengthen the professional readiness of future history teachers in contemporary educational contexts.

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