

**REVIVING BLORA'S CULTURE: AN AUGMENTED REALITY MODULE
BASED ON ART AND TRADITION FOR COLLEGE STUDENTS'
ENGLISH LEARNING**

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Abstract

This study responds to the growing need for culturally grounded and technology-enhanced English learning materials for students enrolled in Primary School Teacher Education programs. At the university level, English instruction often remains generic and insufficiently connected to the cultural contexts that prospective elementary school teachers are expected to introduce in their future classrooms. Addressing this gap, the present study aims to develop an English learning module that integrates local arts and traditions from Blora with Augmented Reality, thereby enhancing contextual relevance, learner engagement, and motivation. The research adopts a development-oriented approach comprising three main stages: needs analysis, product design, and prototype development. Data were collected through interviews, questionnaires, and expert validation processes. The findings from the needs analysis reveal a clear demand among both lecturers and students for English learning materials that are contextually meaningful and supported by interactive technological features. The resulting prototype incorporates local cultural elements, including Barongan and Tayub, which are presented through interactive Augmented Reality components to facilitate more immersive learning experiences. Validation results indicate that the module is highly feasible in terms of content quality and feasible in terms of media design. These findings suggest that the integration of local cultural content with interactive technology not only enriches instructional materials but also fosters more meaningful and engaging English learning experiences.

Keywords: English learning, Local culture, Blora arts, Augmented Reality

Introduction

The transformation of English language learning in higher education has increasingly emphasized the development of comprehensive language proficiency (L. Zhou, 2022). Research on spoken English comprehension is particularly crucial for improving the effectiveness of oral communication systems (Liu,

2021). Given the global importance of English, its mastery should be regarded as a long-term individual investment that contributes to broader academic and professional success (Mika & Mardiana, 2023). English plays a vital role in accessing information, facilitating the acquisition and advancement of knowledge, science, technology, and the arts, as well as fostering international communication (Iman et al., 2021). In the context of higher education, English instruction is expected to enhance students' overall language competence, including accurate language use and integrated skills in listening, speaking, reading, and writing, alongside the development of academic and professional language proficiency (Li & Xu, 2025).

This issue is particularly critical for prospective elementary school teachers, who play a foundational role in shaping students' early English language development. Historically, English has been included in Indonesian elementary education curricula, such as the 1994, 2004, and 2006 curricula, as a local content subject (Saraswati et al., 2020). However, English learning for students in Primary School Teacher Education (PGSD) programs, who are being prepared to teach at the elementary level, remains insufficiently aligned with local cultural contexts. The integration of local wisdom as a learning resource is essential not only within formal education but also in fostering students' character development and their connection to local communities (Sutisnawati et al., 2024). This condition highlights the need to develop English learning modules grounded in traditional arts and cultural practices for PGSD students.

A lack of contextual relevance may lead to decreased learning motivation and difficulties in applying acquired knowledge in real teaching situations. Among the rich sources of local wisdom, Barongan and Tayub represent cultural traditions with strong potential for integration into English learning. Barongan embodies local values that require preservation, not only through recognition but also through innovation and strategic efforts to ensure that younger generations remain connected to their cultural heritage in the 21st century (Ibda, 2019). Meanwhile, Tayub is a traditional Javanese folk performance characterized by paired dancing between female and male performers within agrarian community settings (Tani et

al., 2022). The female dancer, often referred to as a joget performer, typically initiates the performance with a male partner, usually a host or respected community figure, followed by other participants who have registered in advance (Mustika Sari et al., 2016). Incorporating such traditions into English learning materials can enrich instructional content while simultaneously fostering cultural awareness and appreciation among PGSD students as future educators.

This study proposes an innovative solution through the development of an English learning module for PGSD students integrated with Augmented Reality (AR). Through realistic visualization, interactive simulation, and immersive learning experiences, AR enables students to better understand complex concepts (Leoni Indahsari & Sumirat, 2023). Its use can make learning more engaging and interactive (Pradana & Fadhlurahman, n.d.), while also increasing student motivation and participation (Basri et al., n.d.). Despite its significant potential, the effective implementation of AR in educational settings requires fostering positive attitudes among teachers and pre-service teachers, emphasizing that AR is not merely engaging but also pedagogically valuable (Zaky et al., 2024). From a theoretical perspective, the development of modules based on local wisdom aligns with the principles of culturally responsive teaching, which emphasizes the importance of connecting instructional materials with learners' socio-cultural contexts to enhance meaningful learning. Preliminary findings from needs analysis and interviews indicate that English learning remains largely general in nature and lacks contextualization based on local cultural content. In addition, there is a clear demand for more engaging and innovative learning media for students. A review of the literature reveals several research gaps. First, studies on the integration of local wisdom in English learning predominantly focus on elementary school students rather than PGSD students. Second, research on Augmented Reality in education tends to emphasize its role in enhancing learning motivation, without positioning local cultural content as the core of instruction.

The novelty of this study lies in the development of an English learning module that integrates local cultural arts, specifically Barongan and Tayub, as core instructional content, supported by Augmented Reality technology. This module

not only incorporates local cultural elements into AR-based learning but also leverages AR to enhance learning experiences and pedagogical relevance. To date, this integrated approach has not been extensively explored, and thus, this study contributes a new perspective to the innovation of culturally and technologically enriched English language learning.

Accordingly, this study addresses the following research questions: (1) How can an English learning module based on Blora's arts and traditions, integrated with AR, be designed to be relevant, interactive, and beneficial for PGSD students? (2) What are the development outcomes and validity of the module based on expert evaluation? Based on these questions, the objective of this study is to develop and produce a prototype of an English learning module grounded in Blora's arts and traditions and integrated with Augmented Reality.

Methods

This study adopts a Research and Development approach consisting of several key stages, including needs analysis, product design, design validation, as well as product development and refinement prior to further implementation (Febriyana et al., 2023). The needs analysis was conducted through a review of the literature, interviews, and Likert-scale questionnaires administered to lecturers and students in order to identify challenges encountered in the learning process (Astuti et al., 2021). Budget allocation at this stage was directed toward accessing academic journals, reference books, and supporting data collection activities.

Subsequently, the module design was developed by considering user needs in terms of both content and visual presentation. A focus group discussion was conducted involving subject matter experts and media experts to support the initial design process. Budget allocation at this stage included honoraria for expert participants, including specialists in content, instructional media, and Augmented Reality development. Additional resources were also allocated for developing the initial module concept and designing AR-based visual components using relevant software.

The design validation stage involved both content and media experts to evaluate the feasibility of the module in terms of content accuracy, presentation, graphical quality, and language use (Desita Wengrum & Nurhartanto, 2021). Budget allocation at this stage covered validator honoraria and the cost of revising the design based on expert feedback. Following validation, data analysis and design refinement were conducted through iterative revisions informed by expert input, prior to proceeding to the implementation phase at the subsequent Technology Readiness Level.

During the development phase, budget allocation supported module production, software licensing, AR content development, and preliminary testing. The outputs of this research include a scholarly publication and intellectual property registration, which required additional funding allocation. To strengthen the relevance and sustainability of the study, external partners were involved, including elementary school teachers and local cultural communities, particularly during the needs analysis and module development stages. Feedback from these partners informed the design and revision processes, ensuring that the module remains contextually grounded and practically applicable.

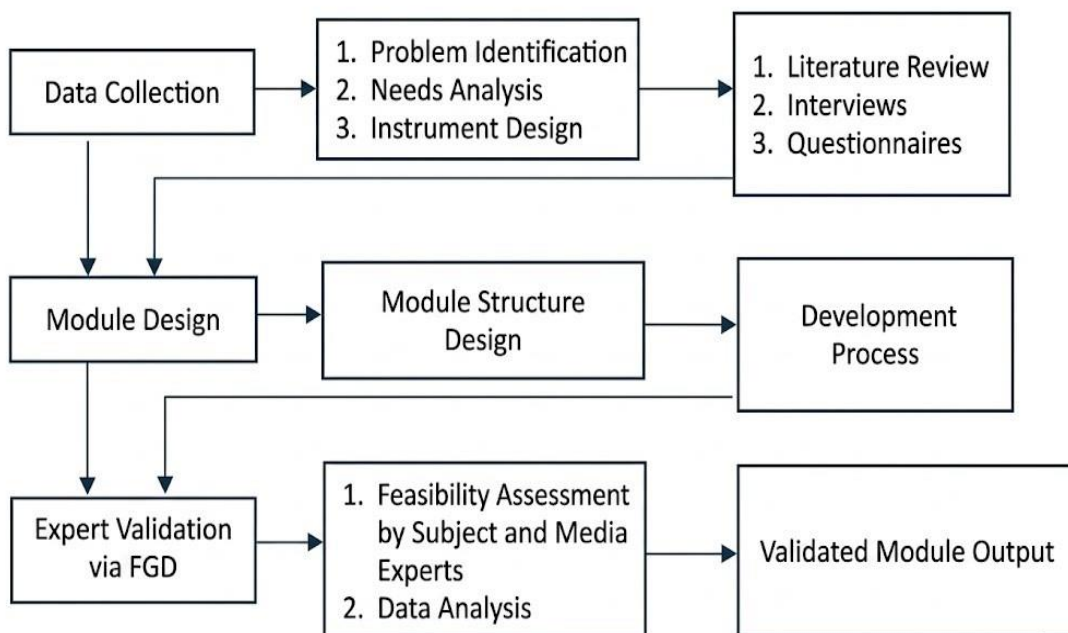


Figure 1. Research Flow Diagram

This study adopts the ADDIE development model, limited to the development stage. This limitation was due to time constraints, therefore the process was carried out only up to the third phase, namely development (Marfu'ah & Meristin, 2022).

The data analysis techniques employed in this study consisted of both qualitative and quantitative approaches. Qualitative descriptive analysis was applied to data obtained from interviews (Imro'athush Sholihah & Annas, 2024) as well as field notes from focus group discussions related to the revision process. In contrast, data derived from questionnaires and validation results provided by content and media experts were analyzed using descriptive quantitative techniques.

Findings and Discussions

Findings

This study resulted in the development of a prototype English learning module based on local arts, culture, and traditions, integrated with Augmented Reality for students in Primary School Teacher Education programs. The development process followed several stages, including needs analysis, design, prototype construction, and validation by content and media experts. Overall findings indicate that the module achieved feasibility ratings ranging from feasible to highly feasible during the limited trial phase.

The needs analysis revealed a strong demand among both lecturers and students for learning materials that are representative of local culture, contextually relevant, and supported by technology. These findings are consistent with prior studies emphasizing the importance of contextual and technology-enhanced learning. However, this study offers a distinct contribution by specifically integrating the local arts and traditions of Blora into English learning through the use of Augmented Reality scanning objects, thereby providing a more immersive and culturally grounded learning experience.

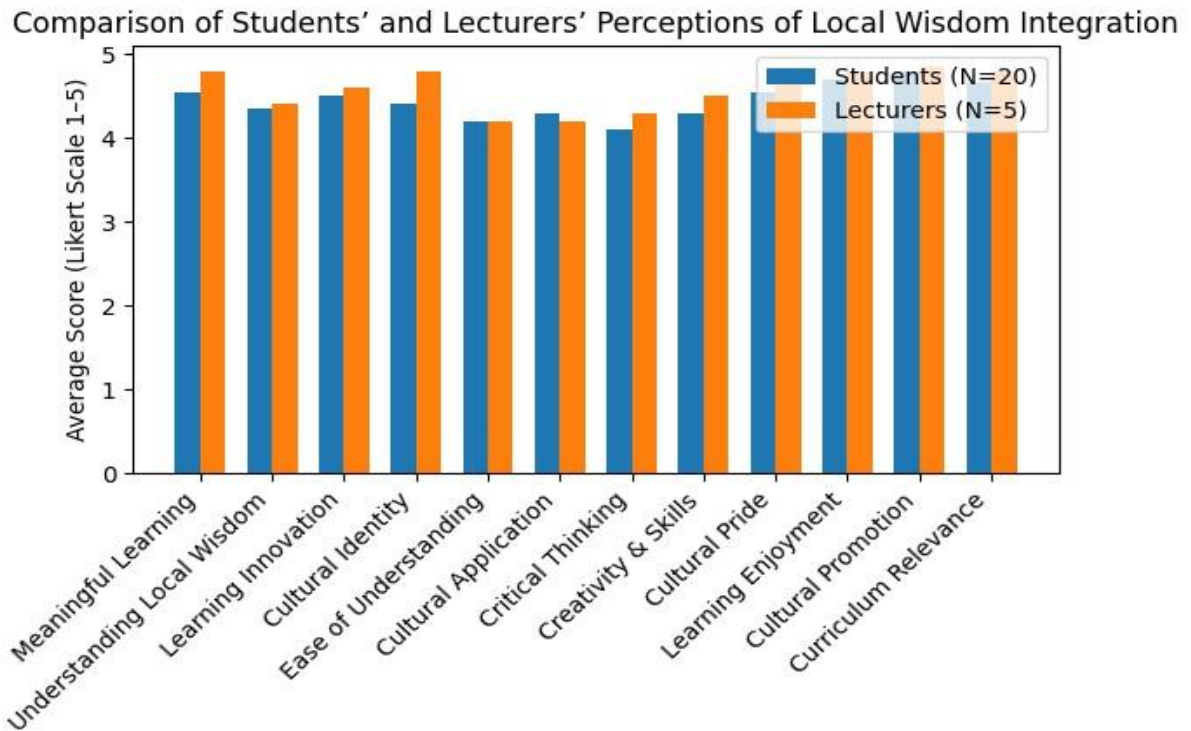


Figure 2. Questionnaire Analysis Results of Lecturers and PGSD Students

The design stage resulted in a prototype instructional module developed based on the ADDIE framework and aligned with the Technological Pedagogical Content Knowledge approach. The prototype includes module identification, core materials, augmented reality-based learning activities, task-based learning exercises, and assessment components. The module is further supported by Augmented Reality features in the form of three-dimensional visual representations of Blora cultural figures, which can be accessed by scanning a barcode.

Table 1. Augmented Reality-Based Instructional Module Prototype

Module Component	Description (TPACK Framework)	Implementation in AR-Based Prototype
Module Identity	Title, learning objectives, basic competencies, indicators, and concept map	Module titled “ <i>Learning English Through Local Culture</i> ” based on Blora’s

local arts and traditions
integrated with Augmented
Reality

Introduction	Content Knowledge (CK): Local culture connected to prior knowledge in English learning Pedagogical Knowledge (PK): Introductory activities for apperception and learning motivation	Students scan AR barcode to access Barongan cultural content as an introductory activity
Main Materials	Integration of CK, PK, and Technological Knowledge (TK) Cultural content: Barongan, Kuda Lumping, Bujang Ganong, Tayub Grammar focus: Simple Present Tense, descriptive text, local vocabulary	AR displays 3D animated figures of Barongan Students read descriptive texts in English and complete vocabulary exercises
Learning Activities	Activities based on Pedagogical Knowledge (PK) and Technological Pedagogical Knowledge (TPK) Methods: Task-Based Learning and Communicative Language Teaching	1. Scan barcode to display AR animation 2. Group discussion describing cultural figures (speaking) 3. Writing short texts about Blora traditions (writing)
Exercises / Assignments	Application of TPACK to support real interaction	Vocabulary matching (cultural terms) Speaking practice using AR-based prompts Writing task: short descriptive text about Tayub dance

Evaluation	Assessment of c and technology aspects	Grammar and vocabulary tests Speaking performance assessment using rubrics
Reflection and Character Development	Integration of Blora cultural values such as cooperation, togetherness, and creativity Linking English learning with local character values (CK + PK)	Classroom discussion: “What character values can be learned from Barongan?” answered in English

The results of the content expert validation indicated a feasibility score of 88 percent, which falls into the highly feasible category. Minor revisions were recommended, particularly related to terminology consistency, graphical refinement, and the addition of cultural context.

Meanwhile, the media expert validation yielded a score of 75 percent, categorized as feasible. Suggested improvements focused on navigation design, audio quality, and visual consistency, although the animation component was evaluated as very good.

Table 3. Content Expert Validation Results

Assessment Aspect	Number of Indicators	Maximum Score	Obtained Score	Percentage
Content Feasibility	2	10	9	90%
Language Use	2	10	8	80%
Presentation	2	10	9	90%
Graphics	2	10	8	80%
Usefulness	2	10	10	100%
Total	10	50	46	88% (Highly Feasible)

Table 4. Media Expert Validation Results

Assessment Aspect	Number of Indicators	Maximum Score	Obtained Score	Percentage
Design Appearance	2	10	8	80%
Ease of Use	2	10	8	80%
Format	1	5	4	80%
Navigation Effectiveness	1	5	3	60%
Audio Quality	1	5	3	60%
Animation	2	10	9	90%
Total	9	45	41	75% (Feasible)

Discussions

The findings of this study indicate that the English learning module based on local arts and traditions integrated with Augmented Reality was evaluated as feasible to highly feasible by both media and content experts. This result reinforces previous studies highlighting that the importance of English proficiency is increasingly driven by the advancement of information technology, international trade, and global cultural exchange (Imro'athush Sholihah & Annas, 2024).

Prior research has also demonstrated that the integration of educational technology in learning environments can enhance student motivation, learning outcomes, and engagement, while enabling more dynamic interactions between students and instructors (Junarti et al., 2023). The use of Augmented Reality platforms such as Assemblr Edu has been shown to improve students' English writing skills, particularly in terms of paragraph organization, grammar, vocabulary, and punctuation (Carrión-Robles et al., 2023). Augmented Reality plays a significant role in learning processes by increasing learners' motivation and supporting access to information (Ismail et al., 2019).

This study contributes to the existing body of knowledge by applying Augmented Reality not to general learning content, but specifically to the cultural context of Blora, which has not previously been explored in AR-based English learning. In doing so, this study extends the scope of Augmented Reality research toward the integration of local culture in language education.

The development of instructional materials that are inclusive and representative of both local and global cultures is essential to ensure that English learning remains contextual and relevant (Tajeddin & Pakzadian, 2020). Incorporating local wisdom into learning can facilitate faster language acquisition, as students are already familiar with the cultural context being used (Suharti et al., 2022; Y. J. Zhou et al., 2024). The content expert validation score of 88 percent further confirms that the integration of Blora's local culture enriches learning materials, enhances contextual relevance, and supports more meaningful language comprehension.

Previous studies have shown that English learning modules based on local wisdom, such as those developed in the context of Jambi culture, can significantly improve students' motivation, with practicality levels reaching 83.86 percent from students and 87.50 percent from teachers (Nafiah, 2020). Similarly, the use of local wisdom-based modules has been found to improve student learning outcomes, as reflected in significant score increases in both experimental and control groups (Saputri & Rohiyatussakinah, 2019). Indonesia, as a multilingual society, presents a unique context in which English acquisition is influenced by cultural factors such as values, beliefs, and social norms, which shape learners' motivation, learning strategies, and perceptions of the language (Imro'athush Sholihah et al., 2024).

The Augmented Reality-based module developed in this study enables students to learn English through the lens of their own cultural values, thereby strengthening cultural identity while enhancing learning motivation. This approach not only makes learning more contextual but also supports the development of intercultural communication skills, which are essential competencies in the twenty-first century.

Conclusion

The module Reviving Blora's Culture based on Augmented Reality has undergone validation by both content and media experts. The content expert validation results, with a feasibility score of 88 percent, categorized as highly feasible, indicate that the aspects of content, language, presentation, graphics, and usefulness meet established standards.

Meanwhile, the media expert validation results, with a score of 75 percent categorized as feasible, suggest that the module performs well in terms of design, navigation, animation, and audio. However, further technical refinement is still required. The product is considered suitable for limited field testing following revisions in response to expert feedback. The recommended revisions are expected to enhance the overall quality of the module, thereby contributing to the development of innovative instructional media that integrates Blora's local cultural wisdom into English language learning.

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