Integrating Local Culture into Digital Learning: Developing Media for Beginner BIPA Students in North Sumatra

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Abstract. This study develops digital learning media that integrate North Sumatran culture to support beginner learners of Bahasa Indonesia for Foreign Speakers (BIPA) at Universitas Negeri Medan. Aiming to enhance speaking and listening skills, the tools combine interactive, culturally relevant content with AI technology, tailored to Generation Z international students. Using the ADDIE-based Research and Development model, the study has reached the implementation stage. The media include AI-generated videos, contextual dialogues, synchronized subtitles, speech modeling, and adaptive pronunciation feedback to improve accuracy, comprehension, and confidence. Early implementation shows positive learner responses, particularly to the cultural integration and interactivity. By embedding local culture into digital learning, the study enriches language acquisition, fosters intercultural competence, and offers a framework for culturally grounded, AI-enhanced BIPA instruction.

Keywords: Digital Learning Media, BIPA, Local Culture, North Sumatra

1 Introduction

In the modern world, proficiency in any language enhances an individual's ability to communicate, perform academically, and move professionally. Bahasa Indonesia, the national language of the Republic of Indonesia, has received international prominence due to the interventions of the government, academic partnerships, and its growing economic role within Southeast Asia [1]. Furthermore, its recent recognition in November 2023 as one of the official languages of UNESCO greatly enhances its standing as a world language. Consistent with this need, BIPA (*Bahasa Indonesia bagi Penutur Asing*) courses have been made available in various parts of the country, including at Universitas Negeri Medan (Unimed), which has been a center of excellence for international students in the Indonesian language for a decade [2]. With an adequate educational infrastructure, professionally trained faculty, and being located in a culturally rich province, Unimed significantly advances BIPA teaching in Northern Sumatra.

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Participants of programs like Darmasiswa for foreign learners come from different walks of life. They learn Bahasa Indonesia for scholarly, professional, or cultural reasons. Many of them are at the beginner stage; hence, they need adequate assistance to build essential communicative competence. In addition, research shows that these learners struggle the most with speaking proficiency [3]. One of the most important problems with BIPA teaching is the traditional focus on grammar and vocabulary rote learning rather than practical speaking and contemporary conversational use [4]. Furthermore, textbooks like Lentera Indonesia and Sehari-hari with Bahasa Indonesia lack adequate culture-based visuals and tend to bore Generation Z learners who prefer digital and interactive materials [5].

There is ample evidence that using digital media motivates learners and aids in the acquisition of languages. For instance, to aid vocabulary and listening skills, digital media like Quizlet [6], film-instructed listening [7], and other web-based tools [8] have shown significant results. Furthermore, speaking practice designed for BIPA learners [9] has also enhanced oral proficiency. Unfortunately, most of these innovations are limited to traditional e-learning frameworks, which tend to be monotonous and devoid of real-time interaction.

Developments in artificial intelligence (AI) technologies are emerging tools for addressing specific problems. The tools can create videos with genuine conversations, adaptive speech modeling, and give instant feedback on pronunciation. These features are helpful for learners at the beginning levels, as they struggle with oral communication. Research shows that instruction supported by AI technologies positively impacts learners' confidence, accuracy, and fluency in different contexts, including Arabic [10] and Japanese [11]. In addition, AI video generation can offer immersive, culturally contextualized immersion into the Indonesian language tailored to the specific requirements of the learners [12]; [13]. Despite these benefits, there is still a significant gap in BIPA pedagogy concerning the application of video animations, particularly for early-stage learners.

Equally important is incorporating local culture in teaching a language since the two are interconnected. North Sumatra's rich cultural heritage, which includes a variety of traditions, languages, and social customs, is ideal for integrating the cultural components into BIPA teaching. Prior studies emphasize that culturally relevant content supports language mastery and deepens learners' understanding of intercultural relations [14]; [15]. However, the current BIPA materials still overlook local culture, leaving learners no chance to engage meaningfully with the world around them.

Thus, to support beginner BIPA learners, there is a critical gap to fill in the creation of North Sumatran culturally contextualized AI-based digital learning media. These media are intended to transcend the challenges posed by traditional teaching resources, motivate learners, and improve their speaking and listening abilities. Furthermore, this digital resource responds to the strategic challenge of Unimed in fostering the use of the Indonesian language and culture in international spheres and, at the same time, addresses the needs of Generation Z learners through the use of adaptable, interactive, and culturally relevant digital resources.

2 Method

This research employed a Research and Development (R&D) design using the ADDIE (Analysis, Design, Development, Implementation, Evaluation) framework to create BIPA digital learning media at Universitas Negeri Medan. The ADDIE model provided a structured process for developing effective instructional tools. In the Analysis stage, learner needs, cultural content, and technological feasibility were examined. The Design stage outlined the instructional goals, media format, and learning activities to target beginner-level speaking and listening skills. During Development, the AI-generated videos and supporting features, such as subtitles and pronunciation feedback, were produced and refined. The Implementation stage involved introducing the media to BIPA learners and instructors for practical use in the classroom. Finally, the Evaluation stage focused on gathering feedback through questionnaires, interviews, and observations to assess effectiveness, cultural relevance, and learner engagement.

This study was conducted at Universitas Negeri Medan during the even semester of the 2024/2025 academic year. Participants included BIPA beginner students, instructors, and language specialists, with one to five individuals in each group. Their responses were used to validate the design and functionality of the media.

3 Result and Discussion

3.1 Result

This study developed and produced three instructional videos on AI technology for beginner-level BIPA students at Universitas Negeri Medan. These were: (1) Self-Introduction, (2) Sharing Holiday Experiences, and (3) Buying a Ticket at a Bus Terminal.

Fig. 1. The AI Learning Media

Fig. 2. BIPA Learning Media (Self-Introduction)

To ensure feasibility, these videos were validated by the specialists in language teaching, educational technology, and regional anthropology. The validation process employed a 4-point Likert scale, where 1 indicated "not valid" and 4 indicated "highly valid," and evaluated three primary criteria: content, media quality, and integration of culture.

Table 1. Expert Validation

Validation Aspect	Indicator	Mean Score (1–4)
Content	Suitability of language for beginners	3.8
	Achievement of learning objectives	3.6
	Clarity of dialogues and sentence structure	3.7
Media	Quality of visual and audio presentation	3.5
	Synchronization of subtitles and dialogues	3.6
	User-friendliness of the interface	3.4
Culture	Relevance to North Sumatran context	3.7
	Accuracy of cultural representation	3.5
	Integration of culture with language use	3.6

As for expert validation results, the AI-based video media achieved an overall mean score of 3.6, placing it within the "Highly Valid" category. The videos are deemed valid for instructional use in beginner-level BIPA classes.

The content aspect achieved a mean score of 3.7, reflecting the materials' strong alignment with the needs of beginner-level learners. Experts noted that the dialogues were clear, simple, and repetitive, which allows learners to engage and practice actively. One language expert noted, "*The dialogues are clear, concise, and appropriate for beginner-level learners. The sequence of topics is also aligned with the BIPA learning progression.*" The materials were also deemed to address the appropriate instructional goals by incorporating essential communicative functions, including greetings, sharing experiences, and various transactions in daily routines.

The assessment of this media component yielded an average score of 3.5, again putting it firmly in the highly valid category. The videos' audio-visual quality was strong, contributing to an engaging educational atmosphere. Synchronization of subtitles with the corresponding dialogues received a score of 3.6, which indicated to the learners that the material was appropriately structured to help them with the learning challenges. The user-friendliness criterion was rated somewhat lower, achieving a score of only 3.4. One media specialist noted, "*The audio-visual quality is strong. Subtitles… but a bigger font with lower contrast would greatly help them as beginners.*" These statements indicate that the videos provide a robust educational experience, but the learners would benefit from additional attention to design details.

The cultural element emerged as one of the most pronounced dimensions with a mean score of 3.6. It was perceived that the scenarios incorporated North Sumatran culture in a seamless and exposure-rich manner. Culture was embedded in language practices through learners using the language in fundamental social interactions. For instance, the portrayal of polite greetings, conversational gestures, and buying a bus ticket are quintessential social practices. A cultural expert noted*, "The cultural integration is highly authentic. Learners are exposed not only to the language but also to social norms and local practices of North Sumatra."* This shows the videos blended language and culture instruction in a pedagogically valuable manner.

The validation results provide clear reasoning that the AI-based video media in question are pedagogically sound, technologically dependable, and culturally appropriate. While areas related to user experience could be improved, the strong validation and instructional design feedback suggest the videos are appropriate for incorporating in beginner BIPA classes and can be a guide for future development of culturally integrated digital media.

3.2 Discussion

The validation results indicate that the AI-based video media designed in this study is very appropriate for beginner-level BIPA learners. The content, media, and cultural scores all indicate that the videos resolve the issues noted in prior research, specifically the engaging, culturally appropriate, and authentic materials for learners of Bahasa Indonesia [4]; [5]. The media equips learners with the appropriate input for developing listening and speaking skills through AI-generated videos that present the needed input in a clear, repetitive, and contextual manner. This aligns with previous research where digital tools such as Quizlet and video lectures fueled language acquisition as long as they were tailored and purposefully designed for the students [6]; [7].

However, another noteworthy result from this research is incorporating North Sumatran culture into BIPA learning materials. Validation scores and expert comments that were received corroborate the fact that culture integration into learning media helps the learners grasp the language and the social culture of the community. This supports the argument that language and culture are two concepts that cannot be separated, and instruction based on culture enhances the understanding of foreign cultures [14]; [15]. While conventional textbooks portray Indonesian culture monolithically, these videos illustrate language within the framework of local traditions and the students' daily lives, which is far more relevant and meaningful to the learners. This approach helps learners master the language and fosters an understanding of the culture, which is important for learners outside Indonesia.

From a technological point of view, AI-generated video content resolves challenges associated with static and non-interactive e-learning frameworks [8]. The affirmative comments regarding the visual and audio components of the simulations AI technologies offer indicate their potential utility in developing simulations for learning that are economical and seamless. This finding is consistent with previous research on AI-assisted language learning in other languages such as Arabic and Japanese, where AI systems enhanced learners' pronunciation, fluency, and bolstered their confidence [10]; [11]. Nonetheless, the lower rating on user-friendliness suggests that although AI brings considerable benefits to education, the interfaces and tools' design and general usability need to be streamlined for ease of navigation for novice users.

This study highlights that using AI-generated culturally contextualized videos critically advances the BIPA pedagogical approach. The findings indicate that AI-generated contextualized videos capture learners' attention, enhance their learning outcomes, and meet the needs of Generation Z learners, who require more interactivity and visual stimulation. The scope of this research was restricted to expert validation and a small number of learners. It is recommended that subsequent research broaden the validation scope to incorporate larger learner groups and assess the impact on learning advancement. Expanding the scope of this

study would further validate and refine these materials, optimizing their preparedness for widespread use.

4 Conclusion

This study was designed and validated culturally based digital video media using artificial intelligence technology for teaching beginner-level BIPA students at Universitas Negeri Medan. The expert validation for the videos named How to Introduce Yourself, Telling About Holiday, and Ticket Purchasing validated these videos as culturally appropriate and effective for teaching listening and speaking skills. The use of AI and local cultures contributes to BIPA pedagogy. It overcomes the challenges of `one size fits all' materials and the digital predilections of Gen Z learners. Even with a limited scope, the results indicate that the use of AI technology to transform culturally relevant materials can enhance language skills and global citizenship and thus needs to be validated with broader learner groups.

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