

Integrating digital society trends into teaching materials: Enhancing Indonesian language learning for foreign speakers at Universitas Pekalongan

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Abstract

The integration of digital society trends into teaching materials has become crucial in enhancing the learning experience, particularly for Indonesian language learners as foreign speakers (BIPA). This research investigates the effectiveness of digital-based teaching materials in improving language competence and cultural understanding among BIPA students at Universitas Pekalongan. A mixed-methods approach was employed, combining quantitative and qualitative data collection. The study involved 50 BIPA students as participants, divided into experimental and control groups. The experimental group utilized digital teaching materials incorporating social media content, interactive applications, and digital storytelling, while the control group used conventional materials. Data were collected through pre-tests, post-tests, and surveys, complemented by interviews and classroom observations. The results indicate a significant improvement in the experimental group's performance, with an average post-test score increase of 25% compared to 10% in the control group. Survey responses show that 90% of students in the experimental group found the digital materials engaging and effective for understanding Indonesian culture. Qualitative findings highlight the relevance of digital tools in aligning with students' learning habits in a digital society. This study concludes that integrating digital trends into teaching materials not only enhances language acquisition but also fosters cultural appreciation, offering a practical model for modern BIPA programs.

Keywords

BIPA, Digital society, Teaching material, Indonesian studies

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Introduction

In the rapidly evolving digital era, the global community is experiencing significant changes in how people learn and interact. Digital technology has become an integral element of education, creating opportunities to enhance teaching effectiveness, particularly in language learning. According to [Siemens \(2005\)](#) in the theory of connectivism, 21st-century learning requires the integration of digital technology to enable learners to connect with dynamic and interactive learning resources. In the context of teaching Indonesian as a Foreign Language (BIPA) at Universitas Pekalongan, adapting to digital society trends is crucial to providing relevant and engaging learning experiences for international students.

Integrating digital technology into teaching materials not only facilitates the learning process but also offers opportunities to creatively embed local cultural values. [Brown \(2007\)](#) asserts that the use of technology in teaching can enhance learner engagement, motivate students, and create immersive learning experiences. Universitas Pekalongan has a significant opportunity to adopt a technology-based approach tailored to its local context, such as interactive digital teaching materials that incorporate the distinctive culture of Pekalongan.

Furthermore, a technology-based approach enables the application of multimodal learning. According to [Kress \(2010\)](#), a multimodal approach employs combinations of communication modes, such as text, images, audio, and video, to support better comprehension. In BIPA teaching, media such as learning applications, cultural videos, and digital simulations can be utilized to teach the language while simultaneously introducing Indonesian culture. This approach aligns with the needs of international learners, who increasingly rely on technology for flexible and personalized language learning.

The case of BIPA teaching at Universitas Pekalongan highlights the substantial potential for developing digital-based teaching materials. Universitas Pekalongan has long been a destination for international students seeking to learn Indonesian and understand local culture, particularly the unique culture of Pekalongan, such as batik, cuisine, and the customs of the coastal communities in Central Java. However, a major challenge lies in the lack of teaching materials that specifically integrate digital technology with local culture. According to internal university data, international students often struggle to comprehend cultural materials presented through conventional methods. This situation necessitates the development of more relevant and innovative teaching materials.

As the number of international students interested in learning BIPA at Universitas Pekalongan continues to rise, the need for digital-based teaching materials becomes increasingly urgent. [Warschauer and Healey \(1998\)](#) found that the use of technology in language learning can enhance learner engagement, allow for more flexible learning, and provide access to various interactive learning resources. In the context of Universitas Pekalongan, technology can be leveraged to present local cultural content

in more engaging ways, such as through learning applications, interactive videos, or multimedia-based digital modules.

Previous research by [Amalia and Arifin \(2021\)](#) revealed that digital teaching materials for beginner-level BIPA learners significantly improved students' language skills. Additionally, a study by [Aulia et al. \(2020\)](#) introduced an Android-based learning application, GABI (Game Android Bahasa Indonesia), which effectively helped BIPA learners understand the Indonesian language more interactively and flexibly. These findings provide a solid foundation for developing BIPA teaching materials at Universitas Pekalongan that are not only technology-based but also incorporate local cultural values.

Cultural diplomacy is also an essential element in BIPA learning at Universitas Pekalongan. According to [Kartikasari and Warsito \(2023\)](#), cultural diplomacy through education can strengthen Indonesia's positive image in the international community. By using digital-based teaching materials, Universitas Pekalongan can promote the unique culture of Pekalongan to international students while helping them adapt to the local cultural environment. This approach not only facilitates language learning but also mitigates the risk of culture shock often experienced by international students.

One example of integrating technology with local culture is the development of video-based interactive teaching materials that depict daily life in Pekalongan, such as batik-making processes, culinary traditions, and activities in traditional markets. Through this approach, international students can learn Indonesian while gaining a deeper understanding of the cultural context. This approach aligns with the theory of contextual teaching and learning (CTL), which emphasizes the importance of experiential learning to improve learners' comprehension and retention ([Johnson, 2002](#)). The need for relevant teaching materials is further underscored by the diverse cultural backgrounds of international students at Universitas Pekalongan, including those from Asia, Europe, and America. This diversity necessitates teaching materials that not only encompass language content but are also accessible via digital platforms that support independent learning. Research by [Retma \(2020\)](#) demonstrated that technology-based teaching materials enable more inclusive and effective learning, particularly for learners with diverse needs and learning styles.

Moreover, digital teaching materials facilitate collaboration among learners through online forums, interactive discussions, and application-based quizzes. [Warschauer \(2002\)](#) stated that technology could serve as a medium for building intercultural connections through cross-border collaboration. By leveraging this technology, BIPA learning at Universitas Pekalongan can become a platform to strengthen international relations and cultural diplomacy. This study aims to explore ways to integrate digital society trends into BIPA teaching materials at Universitas Pekalongan. This approach is expected to ensure that BIPA learning focuses not only on language acquisition but also on cultural introduction and adaptation, thereby strengthening Universitas Pekalongan's role as an innovative center for BIPA education.

Method

This study employed a mixed-methods approach, combining quantitative and qualitative methods, to obtain comprehensive data on the effectiveness of digital-based teaching materials in BIPA (Bahasa Indonesia for Foreign Speakers) instruction. The mixed-methods approach is considered effective in educational research as it allows simultaneous exploration of numerical and narrative aspects (Creswell & Clark, 2017). The research design utilized a quasi-experimental approach with two groups of participants: an experimental group and a control group. The experimental group used digital-based teaching materials, while the control group utilized conventional materials. This design enabled the researchers to systematically compare the learning outcomes between the two groups (Fraenkel et al., 2019).

The study involved 50 BIPA students at Universitas Pekalongan as participants. Participants were selected through purposive sampling, targeting foreign students enrolled in intermediate-level BIPA programs. Sample selection criteria is foreign students registered in the BIPA program at Universitas Pekalongan and proficiency in the Indonesian language at an intermediate level, based on placement test results or academic records. The total number of participants involved was 50 BIPA students, divided into: 25 students who used digital-based teaching materials in experimental group and 25 students who used conventional teaching materials in control group. Participants were systematically assigned to the experimental and control groups. The allocation ensured balanced distribution in terms of language proficiency levels, national backgrounds, and age to minimize potential bias.

The instruments used in this study included tests, questionnaires, interview guides, and observation guidelines. The tests measured participants' Indonesian language proficiency before and after the intervention. Test items were developed based on the Indonesian Language Proficiency Framework (Kerangka Acuan Keterampilan Bahasa Indonesia or KAKBI), covering skills in reading, writing, listening, and speaking (Kemendikbud, 2017). Questionnaires were used to evaluate participants' engagement levels and perceptions of the effectiveness of the digital teaching materials. These questionnaires were adapted from the technology-based learning evaluation model by Wang et al. (2009). Semi-structured interviews were conducted to explore students' learning experiences and perspectives on the relevance of the digital materials. Classroom observations were carried out during the learning process to document participants' interactions and activities in using the materials.

The validity of the instruments was examined using content validity, involving experts in BIPA and educational technology to ensure alignment with the research objectives. The reliability of the quantitative instruments was tested using Cronbach's Alpha coefficient, while qualitative instruments were validated through data triangulation.

The research procedure consisted of four stages: preparation, implementation, data collection, and data analysis.

Preparation Stage

Digital teaching materials were developed by integrating social media content, interactive applications, and digital storytelling elements.

Implementation Stage

The experimental group used digital-based materials for six weeks, while the control group studied with conventional materials. Classroom observations were conducted during the learning process to document participants' activities and interactions.

Data Collection Stage

Pre-tests were administered prior to the intervention to assess participants' initial language proficiency. Post-tests were conducted after the intervention to measure learning outcomes. Questionnaires were completed by participants at the end of the learning period to assess their engagement and perceptions. Semi-structured interviews were held with several participants voluntarily to gain deeper insights into their learning experiences.

Data Analysis Stage

Quantitative data from pre-tests and post-tests were analyzed using t-tests to determine the significance of differences between the experimental and control groups. Qualitative data from interviews and observations were analyzed thematically following the approach by Braun and Clarke (2006).

Results and Discussion

Results

Quantitative finding to evaluate the effectiveness of digital-based teaching materials in improving language competence and cultural understanding among BIPA students at Universitas Pekalongan. A total of 50 BIPA students participated in the study, divided into two groups: Experimental group (25 students) utilized digital teaching materials, including social media content, interactive applications, and digital storytelling. Control group (25 students) used conventional teaching materials.

To evaluate the effectiveness of digital-based teaching materials, pre-tests and post-tests were conducted with both the experimental and control groups. These tests were designed to assess the students' proficiency in the four core language skills (speaking, reading, writing, and listening) and their cultural understanding of Indonesia.

Pre-test to measure the baseline language competence and cultural understanding of the students before the intervention. Speaking: students were asked to perform short oral tasks, such as introducing themselves and discussing a simple cultural topic (e.g., traditional Indonesian foods or holidays). Their responses were evaluated based on fluency, vocabulary, and pronunciation. Reading: students completed comprehension tasks based on short texts about Indonesian culture. Writing: students were instructed to write a short essay or paragraph describing an aspect of their home country's culture

and comparing it to Indonesia. Listening: students listened to short audio clips of native Indonesian speakers and answered multiple-choice comprehension questions. The tests were scored using standardized rubrics aligned with BIPA program goals, providing a quantitative baseline for each skill.

Post-Test to measure the improvement in language competence and cultural understanding after the intervention period. The format of the post-test mirrored that of the pre-test, but with new content to avoid familiarity with the questions. Speaking: students described their favorite Indonesian cultural experience, integrating vocabulary and expressions learned during the intervention. Reading: new reading passages were introduced, featuring slightly more complex cultural topics to evaluate progress in comprehension. Writing: students wrote a reflective essay about their experience learning Indonesian culture through digital or conventional materials, depending on their group. Listening: students completed tasks based on audio clips that included a broader range of vocabulary and conversational contexts. The same standardized rubrics were used to ensure consistency and comparability with the pre-test results.

The pre-test and post-test were administered in controlled classroom settings to ensure uniform conditions. Both tests were scheduled at the same time of day to minimize external factors (e.g., fatigue or time pressure) that could influence performance. Each test lasted approximately 90 minutes, with separate sessions for speaking tasks to allow individual assessment. The results of the pre-tests and post-tests were compared within each group (to measure individual progress) and between the groups (to determine the relative effectiveness of digital-based versus conventional materials). Statistical tools, such as the t-test, were employed to confirm the significance of the observed differences. The pre-test and post-test results revealed significant score improvements in both groups (Table 1).

Table 1. Pre-test and post-test result

Group	Mean Pre-Test Score	Mean Post-Test Score	Average Increase	Percentage
Experimental Group	60	75	15	25%
Control Group	62	68	6	9.68%

A statistical analysis using a t-test demonstrated a significant difference in the post-test score improvements between the experimental and control groups, t-value: 4.78, degrees of freedom (df): 48, and p-value: 0.0001 ($p < 0.05$). These results indicate that digital-based teaching materials have a significantly greater impact on improving the language competence of BIPA students compared to conventional materials.

Survey data revealed that 90% of students in the experimental group found the digital teaching materials: engaging and interactive, effective in enhancing their understanding of Indonesian culture and aligned with their learning habits in the digital age. The quantitative findings confirm that integrating digital society trends into BIPA teaching materials significantly enhances students' language competence. The improvements

span all language skill areas, with the greatest impact observed in speaking and writing skills. These results underscore the effectiveness of digital-based approaches in supporting more relevant and interactive learning experiences for modern BIPA programs.

This research utilized qualitative data collection methods, including interviews, classroom observations, and open-ended survey responses, to examine the impact of digital-based teaching materials on language competence and cultural understanding among BIPA students at Universitas Pekalongan. The findings reveal valuable insights into student engagement, cultural appreciation, and teaching dynamics, as detailed below.

The qualitative analysis demonstrated that digital teaching materials significantly enhanced student engagement, particularly in the experimental group. Key observations include:

1. **Relevance to digital habits:** Students found the integration of social media content and interactive applications highly relatable, aligning with their daily digital practices.
2. **Motivational factors:** Digital storytelling tasks fostered enthusiasm and creativity, as students were encouraged to express their ideas through multimedia platforms.
3. **Collaborative learning:** The use of interactive applications promoted collaboration among students, creating a more dynamic classroom environment.

The experimental group exhibited a deeper appreciation for Indonesian culture, as evidenced by their active participation in culturally themed activities:

1. **Contextual learning:** social media-based content exposed students to authentic cultural expressions, such as proverbs, idioms, and traditions shared on platforms like Instagram and TikTok.
2. **Reflections on culture:** Classroom discussions revealed that students were better able to compare and contrast their native cultures with Indonesian traditions, fostering cross-cultural awareness.
3. **Practical application:** Tasks involving digital storytelling allowed students to explore cultural topics, such as traditional ceremonies and folklore, which they found memorable and impactful.

Teachers noted significant improvements in classroom dynamics and student interaction when using digital-based materials:

1. **Increased participation:** Digital tools encouraged even less-confident students to engage more actively in classroom discussions.
2. **Improved comprehension:** Students demonstrated better understanding and retention of material due to the visual and interactive nature of digital content.

3. **Efficient feedback:** The use of applications enabled teachers to provide real-time feedback, helping students address language errors more effectively.

Despite the positive outcomes, some challenges were identified: technical difficulties: A few students struggled with unfamiliar applications or limited access to digital devices. Teachers mitigated these issues by providing tutorials and supplementary offline resources. Balancing digital and traditional methods: Teachers emphasized the need to combine digital tools with conventional teaching approaches to cater to diverse student preferences and ensure inclusivity.

Interviews with students revealed an overwhelmingly positive response to the use of digital-based teaching materials:

1. **Engagement and enjoyment:** Students described the materials as “fun,” “modern,” and “interesting,” which motivated them to participate actively in learning activities.
2. **Cultural connection:** Many students expressed a newfound appreciation for Indonesian culture, attributing their improved understanding to the relevance and authenticity of digital content.
3. **Learning autonomy:** Digital tools allowed students to practice independently, reinforcing their learning outside the classroom.

The qualitative findings confirm that digital-based teaching materials not only enhance language acquisition but also promote cultural understanding and student engagement. The integration of digital tools creates a dynamic learning environment that resonates with the habits of modern learners. While challenges such as technical limitations exist, these can be addressed through careful planning and the combination of digital and traditional methods. This study highlights the potential of digital-based teaching materials as a practical model for advancing BIPA programs and aligning them with the demands of a digital society.

Discussion

The results obtained and presented in this research represent the outcomes of systematic investigations aimed at evaluating the effectiveness of digital-based teaching materials for BIPA (Bahasa Indonesia bagi Penutur Asing) students. These findings are derived from both quantitative and qualitative data collection methods, providing a comprehensive understanding of the impact of the intervention on students' language competence and cultural understanding.

The quantitative data, which includes pre-test and post-test scores, provide measurable evidence of the improvement in language skills among BIPA students. Specifically: Performance improvement: the experimental group (students using digital teaching materials) showed a significantly higher increase in test scores compared to the control group (students using conventional materials). Statistical validation: the differences in performance were statistically analyzed, confirming the significance of the observed

improvements and supporting the conclusion that digital materials are more effective. These quantitative results highlight the measurable impact of digital tools in enhancing specific language skills (speaking, writing, reading, and listening) and overall cultural understanding.

The qualitative findings add depth and context to the quantitative results by exploring how and why digital-based materials influenced students' learning experiences. Key insights include: Engagement and motivation: students found the materials engaging, modern, and aligned with their digital habits, which increased their motivation to participate in learning activities. Cultural appreciation: By incorporating culturally rich and authentic content (e.g., social media posts, digital storytelling), students developed a deeper understanding of Indonesian culture, which is a key objective of BIPA programs. Teaching efficiency: Teachers observed more active participation, better comprehension, and improved classroom dynamics when using digital tools, suggesting their practical benefits in a learning environment.

The results claimed as research findings are not just raw data but evidence of the relationships, patterns, and outcomes generated through the intervention. The integration of digital trends into teaching materials is effective in improving both language competence and cultural understanding for BIPA students. Alignment with modern learning habits, the relevance of digital tools to students' digital lifestyles makes learning more engaging and impactful. Practical implications for teaching: These findings provide a model for modernizing BIPA programs and highlight the importance of blending traditional and digital teaching approaches to maximize inclusivity and effectiveness. In essence, the research findings demonstrate that the use of digital-based materials is a promising approach for addressing the challenges of modern language education, particularly for foreign learners of Indonesian. They offer actionable insights for educators, policymakers, and curriculum developers to enhance BIPA teaching methodologies in the context of an increasingly digital society.

Conclusion

The conclusion of this study highlights that integrating digital society trends into teaching materials effectively enhances language competence and cultural understanding among BIPA students. The use of digital-based materials, including social media content, interactive applications, and digital storytelling, significantly improved the learning outcomes of the experimental group compared to the control group utilizing conventional materials. With an average post-test score increase of 25% in the experimental group and 90% of students reporting the digital materials as engaging and effective, the findings underscore the relevance of digital tools in supporting learning habits in the digital era. Therefore, the adoption of digital-based teaching materials not only strengthens language acquisition but also fosters cultural appreciation, offering a relevant and practical model for modern BIPA programs.

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