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TECHNOLOGY INTEGRATION IN BIPA LEARNING: BENEFITS, CHALLENGES, AND PERSPECTIVES FROM TEACHERS AND STUDENTS

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Abstract

Despite the increasing incorporation of digital tools in BIPA (Bahasa Indonesia bagi Penutur Asing) instruction, few studies have addressed how teachers and students experienced and responded to this integration. This study was conducted to explore how both groups understood the advantages, obstacles, and implementation strategies of using technology in BIPA classrooms. A qualitative method was applied, utilizing classroom observations and semi-structured interviews with two BIPA teachers and three international students from Thailand and Ghana at a university in Batam. The findings revealed that technology-enhanced vocabulary learning supported cultural exposure and improved student engagement, but also brought challenges such as overdependence on translation applications, limited concentration, and unequal access to digital infrastructure. The study concluded that successful technology use in BIPA required a balanced combination of digital media and interactive, communicative teaching. Practical implications highlighted the importance of equipping teachers with appropriate digital training, encouraging students to engage critically and independently with technology, and ensuring that institutions provide inclusive access, infrastructure, and policies to support meaningful technology-enhanced learning.

Keywords: BIPA instruction, technology integration, cultural exposure, digital pedagogy

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INTRODUCTION

The BIPA (Bahasa Indonesia untuk Penutur Asing) program is an Indonesian language education program designed for non-native speakers. Learning the Indonesian language is not only a means of communication but also a gateway to understanding the diversity and richness of Indonesian culture. BIPA was established with the vision of teaching the Indonesian language to the world so that BIPA students can better understand Indonesian culture (Wulandari, 2024). Over time, the development of digital technology has influenced various aspects of education, including BIPA learning.

The use of technology has introduced new ways for BIPA students to learn, such as online platforms, language applications, and social media platforms. The use of language-learning applications such as Duolingo and Babbel, as well as social media platforms like Instagram, YouTube, and TikTok, has been shown to enhance BIPA students' engagement and motivation through interactive content (Nasrullah et al., 2025). Technology not only impacts BIPA students but also provides BIPA teachers with new teaching methods and resources to

enhance the learning experience (Rahmat et al., 2024). One teaching method that teachers can use is utilizing social media posts as teaching materials, such as Facebook statuses, Instagram captions, and Twitter tweets for reading and speaking lessons. Based on the perspectives of teachers, social media platforms have a lot of engaging content and are always updated (Diani & Dewi, 2020). While these tools make learning easier and more flexible, they also create challenges, such as less direct interaction, too much reliance on translation tools, and difficulty in experiencing Indonesian culture fully.

For students of Bahasa Indonesia for Foreign Speakers (BIPA), technology plays a crucial role in their learning process, as digital platforms, applications, and multimedia resources provide flexible access to materials anytime and anywhere (Kurniawati & Nurlina, 2024). Translation tools, digital dictionaries, and online courses help learners understand Indonesian grammar, vocabulary, and cultural nuances (Riki Nasrullah, 2024), while interactive media such as videos and social networks offer opportunities to practice speaking, thereby increasing confidence (Nurramdhani et al., 2024). Despite these benefits, perceptions of technology use vary. Some students view it as supporting independent learning and communication skills (Martutik et al., 2023), whereas others still struggle with oral proficiency (Rahmat et al., 2024). Teachers also hold mixed views, with some acknowledging its potential to engage students while others encounter technical limitations and insufficient training. These differing perspectives influence how technology is implemented and how effectively it supports language acquisition. Thus, this study examines both teachers' and students' perceptions of technology in BIPA learning, including its advantages and limitations.

Technology use in BIPA classrooms offers opportunities yet presents challenges. Studies show varying perceptions among foreign learners regarding BIPA instruction (Sobara et al., 2024). Interviews with BIPA teachers reveal that textbooks are outdated and misaligned with contemporary language use, a concern echoed by two teachers (Mr D & Ms T), who noted that current materials do not reflect real-life communication needs. Teachers also express mixed reactions toward technological integration: while tools like Google Translate help bridge communication gaps when teachers and students do not share a common language, overreliance on translation and AI-based applications may hinder vocabulary development, grammar understanding, and communication skills (Laksono & Ismiatun, 2023). Students face similar issues, as limited bilingual dictionaries such as Indonesian–Thai push them to depend heavily on AI tools. Additionally, cultural norms and contextual meanings are often not fully conveyed through digital tools. Even so, ongoing technological integration in BIPA instruction is expected to broaden the global reach of the Indonesian language (Maranta et al., 2023). Although several studies discuss BIPA teaching methods and materials, limited research explores how teachers and students perceive technology use, which this study addresses.

Digital technology has significantly improved the accessibility and effectiveness of BIPA learning. Translation tools, audiovisual resources, and digital platforms support grammar, vocabulary, and cultural learning (Nasrullah, 2024). Google Translate and bilingual dictionaries help students grasp meaning and sentence structure, while PowerPoint, VR, and e-learning platforms enhance listening, reading, and writing skills through immersive experiences (Nurramdhani et al., 2024). Audiovisual media also improve pronunciation and engagement. Students benefit from increased flexibility, interactive vocabulary learning, and opportunities to interact with native speakers via online platforms (Rahmat et al., 2024). However, challenges such as overdependence on automated translation tools, passive engagement, reduced authentic interaction, unstable internet, and limited digital literacy among teachers remain significant (Reyaz Ahmad Bhat, 2023; Consoli et al., 2024). Teachers must therefore manage technology use carefully to ensure it supports rather than undermines learning, emphasizing the need for

technological proficiency to enhance engagement and motivation (Septriani, 2020). Additionally, unequal device access and the need for teachers to master tools like Zoom and ChatGPT continue to affect implementation (Kinas & Nilawati, 2024). While technology offers notable benefits for both students and teachers, it also introduces challenges that require careful consideration.

Previous studies have extensively explored the benefits of technology in BIPA learning, particularly in enhancing accessibility, engagement, and learning motivation. Digital platforms, interactive media, and translation tools are often credited with helping students understand Indonesian more easily and making the learning process more flexible and enjoyable. However, there is still limited research that investigates how technology is actually integrated into daily instructional practices and how both teachers and students experience this process. In addition, the challenges related to technology use, such as overreliance on digital tools, reduced verbal interaction, technical issues, and student passivity, are often underrepresented in existing literature. These issues may undermine the intended benefits of technology if not addressed properly.

To fill this gap, this study explores the use of technology in BIPA classrooms from the perspectives of both teachers and students, with a specific focus on three areas: (1) the perceived benefits of technology in supporting learning, (2) the challenges encountered during its implementation, and (3) how technology is integrated into classroom practices. The findings are expected to offer practical insights for achieving a more balanced, purposeful, and meaningful use of technology in BIPA instruction.

RESEARCH METHOD

This research uses a qualitative research design to explore both teachers' and students' perspectives on technology integration in BIPA (Bahasa Indonesia bagi Penutur Asing) learning. The qualitative method serves as a solid foundation for understanding the complexity of interactions among individuals, institutions, and social contexts that influence the learning and teaching process (Maranta et al., 2023). Through this method, the researcher aims to gain rich, descriptive insights into how technology is currently being used in BIPA classrooms and how it impacts both teaching and learning dynamics.

In order to explore these perspectives, the research was implemented at a university located in Batam, Indonesia, where BIPA (Bahasa Indonesia bagi Penutur Asing) courses are offered. The university was chosen not only due to the researcher’s connection with BIPA teachers, which facilitated communication and data collection, but also because it is the only university in the region that offers a Darmasiswa program for international students. Additionally, the university has a high number of international students, creating a diverse linguistic and cultural environment that makes it an ideal setting for studying the integration of technology in BIPA learning.

The participants involved in this study were BIPA students from Thailand and Ghana, who are currently studying at the university in Batam. A total of seven Thai students and one (1) Ghanaian student were selected because of their active participation in BIPA classes and diverse cultural backgrounds, providing valuable insights into cross-cultural perspectives on technology in language learning. In addition to the students, two BIPA teachers, who are professional instructors involved in teaching BIPA courses at the same institution, also participated in this study. These teachers were not only accessible to the researcher but were also selected based on scientific considerations: they possess substantial experience in implementing technology in BIPA instruction, regularly teach diverse international learners, and are directly involved in curriculum execution. Their professional expertise and ongoing

engagement in technology-supported teaching provided rich and relevant data for examining technology integration in BIPA classrooms. The selection of participants was done using purposive sampling, focusing on individuals directly involved in BIPA learning processes and with experience in using (or attempting to use) technology in the classroom. The purpose of sampling is to obtain a descriptive overview of the characteristics of the units of observation included in the sample, as well as to enable generalization and evaluate the criteria of the population. (Bhardwaj, 2019).

Data were collected using two primary qualitative techniques: observations and semi-structured interviews, aiming to provide a comprehensive understanding of classroom practices and participants' views. Observation seeks to address such mysteries as a method that employs specific techniques to understand organizations and social situations, as well as to interact with the subjects being observed (Andiono et al., 2025). In addition, semi-structured interviews were conducted to gather in-depth qualitative data. The interviews aimed to explore personal experiences, specific challenges, and coping strategies employed by the students (Stapley et al., 2023). During BIPA classroom sessions, observations were made to focus on interaction patterns between teachers and students, especially on how they use technology to facilitate BIPA teaching. To guide the observation process, the researcher used two formal instruments: an Observation Checklist and a Field Notes Guide. The checklist contained indicators related to the types of technology used (e.g., PowerPoints, speakers, audiovisual tools, smartphones, mobile applications), the frequency and manner of their use, patterns of teacher–student interaction when technology was present, and students' engagement when technology was used or not used in the classroom. Meanwhile, the field notes guide was used to record detailed classroom behaviors, situational contexts, and spontaneous interactions that complemented the checklist data. These instruments ensured systematic, consistent, and credible data collection across all observation sessions.

The observations were conducted in a non-participant manner, where the researcher did not intervene in the learning process but merely recorded behaviors, actions, and interactions. In addition to observations, semi-structured interviews were made to both teachers and students to obtain deeper insights. Teachers were asked about the challenges in integrating technology in BIPA teaching, types of technology/tools they used or wished to use and their perceptions of how technology affects student engagement and language acquisition. Meanwhile, students were asked about their experiences with technology use in BIPA classes, the difficulties or benefits they experienced when technology was used in learning and suggestions for improving technology integration to support their learning. All interviews were developed based on themes observed during classroom visits and supported by references to previous studies, and were recorded (with permission) to ensure accuracy and completeness of the data.

Table 1. Teacher Interview Instrument Grid

No.	Variable (Research Focus)	Indicator	Interview Question (Item)
1	Teaching Strategies	Frequency of tech use	What technology do you most frequently use in your BIPA teaching?
		Adaptability	How do you adjust your teaching strategies when using technology?

		Collaboration facilitation	Do you use technology to facilitate student collaboration?
		Teaching effectiveness	Does technology increase the effectiveness of your teaching?
		Student motivation	To what extent does technology help you motivate students?
2	Classroom Management	Maintaining focus	How do you keep students focused when using technology?
		Activity balance	Do you balance technology use with non-digital activities?
		Tech policy	Do you have a specific policy on mobile/laptop use in the classroom?
		Accessibility and equity	How do you ensure all students have equal access and skills to use technology?
		Problem-solving	How do you deal with technical issues during class?
3	Assessment Practice	Digital assessment platform	Do you use digital platforms to assess students?
		Formative assessment tools	Do you use online interactive quizzes for formative assessment?
		Assessment efficiency	Does technology make assessment more efficient for you?
		Academic integrity	How do you ensure students don't overly rely on tools during assessments?
		Evaluating tech-based assignments	How do you assess assignments that involve technology?

Table 2. Student Interview Instrument Grid

No	Variable (Research Focus)	Indicator	Interview Question (Item)
1	Strategies	Teacher's digital support	Does your teacher teach digital skills to support learning?
		Understanding via tech	Does technology help you understand the lesson better?

No	Variable (Research Focus)	Indicator	Interview Question (Item)
		Engagement and interest	How does technology make the lesson more interesting?
		Vocabulary/grammar aid	Does technology help you learn vocabulary or grammar?
		Student suggestions	What are your suggestions for using technology in language class?
2	Classroom Management	Digital class control	How does your teacher manage the class when everyone is using digital devices?
		Focus or distraction	Does technology help you focus or distract you?
		Non-digital balance	Does your teacher also provide non-digital activities?
		Handling technical issues	Have you experienced technical issues during class?
		Misuse response	How does the teacher handle students who misuse technology?
3	Assessment Practice	Digital assessment experience	Has your teacher ever given digital/online assessments?
		Opinion on digital grading	How do you feel about having your assignments graded digitally?
		Perception of fairness	Do you think it's fair to be assessed on work done with technology tools?
		Digital feedback	Do you receive feedback from your teacher through digital means?
		Motivation from digital tools	Does digital assessment make you more motivated to study?

The data gathered from observations and interviews were analyzed using thematic analysis. Thematic analysis refers to a systematic approach that involves identifying patterns, themes, and categories in the data collected, aiming to reveal meaningful insights relating to the research question or objective. Through an iterative process of coding and categorizing the

data, the researcher can uncover recurring themes and variations, thereby facilitating the development of rich and comprehensive findings (Marsevani, M., Sasmi, N. I., & Zaki, 2024). The thematic analysis in this study followed several key steps. First, Familiarization with Data: Transcribing interviews and reviewing observation notes to gain an overall understanding. Afterward, the researcher generated initial codes by identifying significant statements, repeated ideas, and key points related to technology integration in BIPA learning. Following this step, similar codes were grouped into broader themes, such as "Challenges in Technology Use", "Students' Engagement with Digital Tools", and "Teachers' Strategies". Once themes were established, they were reviewed to ensure that they accurately represented the data and were distinct from one another. The researcher then defined and named the themes, providing clear definitions and names for each theme that reflect the participants' experiences and perspectives. Finally, the themes were connected to the research questions and literature to present findings in a coherent narrative.

FINDINGS

1. Perceived Benefits of Technology Integration in BIPA Class

1.1 Vocabulary Comprehension Support

Classroom observations and interviews revealed that technology played an important role in helping students understand new vocabulary, particularly abstract and unfamiliar words. Students S, M, and W frequently relied on YouTube videos, animated clips, and contextual images provided by the teacher to support their comprehension. They felt that visual media made the learning process more engaging than textbook-only instruction and allowed them to interpret meanings more easily by observing real-life situations. During lessons, students were noticeably more focused and responsive when teachers integrated multimedia content, suggesting that visual input significantly enhanced their ability to process and retain vocabulary.

1.2 Quick Access to Translation Tools

Technology also supported students through the use of translation applications, which they frequently used during both classroom tasks and independent study. Google Translate served as the most commonly used tool because it allowed them to quickly decode unfamiliar words, clarify instructions, and complete assignments on time. For Student W, translation was even more challenging due to the unavailability of an Indonesia–Twi dictionary, causing her to translate Indonesian into English first, and then into Twi. Although the process was longer and sometimes confusing, translation apps still provided her with the only available linguistic support. These tools offered a sense of security for students who lacked strong language foundations, helping them stay on track with classroom materials.

1.3 Enhanced Engagement Through Multimedia

The integration of multimedia, including videos, audio clips, visual slides, and interactive learning platforms, contributed significantly to increasing student engagement. Teacher T regularly used Kahoot and other gamified quizzes to encourage student participation, and students were consistently more enthusiastic and competitive during these sessions. They also appreciated the use of Indonesian cultural videos, which made lessons more lively and relevant to their real-life experiences in Indonesia. Students expressed that multimedia helped them

maintain interest and motivation, particularly when traditional textbook explanations felt repetitive or monotonous.

1.4 Efficient and Creative Instructional Material Design

From the teachers' perspective, technology played a crucial role in improving the efficiency and creativity of lesson preparation. Teachers T and Z reported using Canva, AI-based generators, and PowerPoint templates to develop visually appealing materials that supported students' linguistic and cultural understanding. These tools allowed them to design vocabulary lists, contextual examples, and discussion prompts more quickly than manual preparation. The ability to incorporate images, icons, colors, and audio also made their materials more accessible for international learners with diverse learning styles. Overall, digital tools streamlined the workflow and enabled teachers to present content more dynamically and interactively.

1.5 Cultural Exposure Through Digital Media

Technology also provided meaningful exposure to Indonesian culture, which students considered essential for learning the language effectively. Students often accessed social media videos, vlogs, and cultural documentaries to better understand local customs, gestures, social etiquette, and everyday expressions. In class, teachers strategically selected digital cultural materials to help students connect lesson content with authentic Indonesian settings. Students reported that digital cultural resources helped them interpret contextual meanings more accurately and feel more connected to the Indonesian environment, which deepened their cultural awareness beyond what textbooks alone could offer.

2. Linguistic and Cultural Challenges in Technology-Enhanced BIPA Learning

2.1 Inaccuracy of Machine Translation

Despite its usefulness, machine translation became one of the most frequent linguistic challenges faced by students. Students S and M noted that Google Translate often produced literal or contextually incorrect translations, especially when dealing with slang, idiomatic expressions, or culturally rich phrases. These inaccuracies led students to misunderstand instructions or misinterpret classroom tasks, as the translated output did not always reflect real Indonesian usage. Teachers also observed that some student errors directly resulted from overreliance on automatic translation rather than engaging with the intended meaning in context.

2.2 Multilingual Mediation Difficulties

Students from linguistic backgrounds with limited bilingual resources, particularly Student W, experienced additional difficulties due to the lack of a direct Indonesian–Twi dictionary. This forced her to perform double translation through English, which frequently altered the meaning and slowed down her comprehension process. This multilingual mediation challenge affected her confidence and caused her to fall behind during fast-paced lessons. Teachers acknowledged that such limitations made it difficult to provide equal learning support for students whose first languages were not widely represented in digital linguistic tools.

2.3 Technical Issues in the Classroom

Classroom observations showed recurring technical issues that disrupted the learning process. The projector occasionally malfunctioned, audio quality was inconsistent, and the projection screen was sometimes difficult for students to view clearly. These interruptions forced teachers to modify their lesson delivery on the spot, reducing the effectiveness of multimedia-based instruction. Students expressed frustration when video or audio materials could not be displayed properly, as it reduced their ability to follow explanations or participate fully in the lesson.

2.4 Digital Distraction Among Students

Another challenge identified was the tendency of students to become distracted when using their mobile phones during lessons. Teacher T observed that some students used their devices to browse unrelated apps or access social media instead of focusing on assigned tasks. Student M openly admitted that he was easily distracted by notifications and online content once he opened his phone for classroom activities. These distractions disrupted the flow of learning and limited opportunities for oral interaction, as students became less engaged with the teacher and classroom discussions.

2.5 Unequal Digital Access

Disparities in access to digital devices also created challenges in the classroom. While some students had laptops and stable internet connections, others relied solely on their mobile phones, which made participation in collaborative or digital-heavy activities more difficult. Teachers noted that students with limited access struggled to open shared documents, type longer responses, or follow the lesson smoothly. This imbalance resulted in unequal learning experiences and influenced student performance during technology-supported activities.

2.6 Passive Learning Due to Overreliance on Technology

Teachers also expressed concern that students were becoming passive learners due to overdependence on translation apps and AI tools. Instead of attempting to understand meaning from context, many students immediately turned to digital solutions to complete their work. Teacher Z observed that this reliance reduced students' cognitive engagement and discouraged them from actively processing linguistic features. In several cases, students failed to develop problem-solving strategies in language learning because they consistently expected technology to provide instant answers.

3. Technology Integration Practices in BIPA Class

3.1 Use of Visual and Multimedia Demonstrations

Teachers integrated visual and multimedia demonstrations as a core component of their instructional strategies. Teacher T routinely used images, videos, and animated clips to introduce vocabulary and provide contextual examples. These materials allowed students to visualize real-life situations and connect language input with concrete scenes, which strengthened comprehension and supported students who struggled with limited vocabulary knowledge.

3.2 Interactive and Collaborative Platforms

Teachers also incorporated interactive platforms such as Google Docs for collaborative writing and Kahoot for formative assessment. These platforms encouraged participation by allowing students to work together, edit real-time documents, and respond to competitive quiz questions. Observations showed that students were more engaged and enthusiastic during digital collaboration sessions compared to traditional paper-based tasks, indicating the motivational benefits of technology.

3.3 Balancing Digital and Non-Digital Methods

To prevent students from becoming passive consumers of digital content, Teacher Z consistently paired technological tools with non-digital activities such as handwriting practice, reading printed texts, and group discussions. She emphasized the importance of maintaining foundational literacy and writing skills that could be overshadowed by excessive screen use. This balanced approach ensured that technology supported, rather than replaced, essential language learning processes.

3.4 Adaptation When Technology Fails

Both teachers demonstrated flexibility when facing technological disruptions. When projectors malfunctioned or audio could not be played, Teacher T relied on gestures, facial expressions, and simplified oral explanations. Similarly, Teacher Z shifted to printed materials or the whiteboard to continue the lesson. These adaptive strategies ensured continuity in learning and minimized the impact of technical problems.

3.5 Minimizing Overreliance on Translation Apps

Teachers also attempted to reduce students' dependency on translation applications by encouraging them to infer meaning from contextual clues. Students were trained to identify keywords, analyze sentence structure, and compare similar examples before resorting to digital translation. However, due to limited bilingual resources for certain languages, this strategy was not always effective, especially for students with lower proficiency levels.

3.6 Encouraging Oral Interaction and Classroom Communication

To maintain active language use, teachers integrated speaking activities such as guided discussions, question–answer sessions, and situational role-plays. These activities required students to express ideas using Indonesian rather than relying on digital tools. Observations indicated that oral tasks increased student confidence and reduced dependency on screens, supporting more balanced communicative engagement.

DISCUSSION

Perceived Benefits of Technology Integration in BIPA Class

The integration of digital tools in BIPA classrooms yielded notable benefits, especially in boosting learner engagement and supporting individualized language comprehension. Students found that multimedia content, such as videos and interactive games, created a more

dynamic and stimulating learning environment. These observations align with the findings of Liu et al. (2020) and Segar and Asmawi (2024) who argue that multimedia-enhanced instruction significantly improves learners' attention and motivation in second language classrooms. Moreover, the use of translation tools, despite their imperfections, provided learners with immediate access to meaning, reducing anxiety and increasing learner autonomy.

From a teaching perspective, digital platforms like Canva and AI-assisted generators improved efficiency and creativity in instructional design. This corresponds with Christodoulou and Angeli (2022), Schmid et al. (2022) assertion that technology empowers teachers to deliver more engaging and flexible lessons tailored to student needs. Additionally, the observed practices reflected a move toward personalized learning environments, where digital content could be adjusted to different learning styles.

Nevertheless, overreliance on translation applications risks weakening learners' cognitive engagement with language. As Zhai et al. (2024), and Aisyiyah et al. (2024) caution, continuous dependency on digital scaffolds may inhibit deeper linguistic processing, particularly in productive skills such as speaking and writing. Therefore Students spent significant time verifying feedback from ChatGPT, indicating a reliance on technology and a potential reduction in independent cognitive engagement. For example, one student spent more than 54 minutes checking and verifying feedback, while another student who was more trusting of the feedback only took about 10 minutes (Xu et al., 2025; Wang et al., 2024).

Still, when used strategically and with pedagogical guidance, technology supported multimodal learning and facilitated access to complex cultural and linguistic content. These benefits resonate with the principles of multimodal input theory and the ecological approach to CALL, which emphasize the value of diverse resources and interactive contexts in second language acquisition (Rahmanu & Molnár, 2024; Feijoo & Anglada, 2024). In addition, the ecological approach as described by Chong et al. (2023), and Alqurashi (2025) within a technology-based learning framework, suggests that language acquisition occurs most effectively when learners are in an environment that provides authentic opportunities to interact and actively participate. This means that the use of technology should not stand alone, but be supported by social interaction, feedback from the teacher, as well as real-life situations that contextualize the language.

Linguistic and Cultural Challenges in Technology-Enhanced BIPA Learning

Despite the advantages, the integration of technology in BIPA classrooms introduced several linguistic and cultural challenges. Students often struggled with the limitations of machine translation tools, which failed to capture the nuances of informal language, idioms, and cultural references. This is in line with Abimbola (2023) and Fitria (2021), who note that while translation tools support vocabulary acquisition, they frequently produce decontextualized or literal interpretations that can mislead learners. Student W's reliance on English as a bridge language also highlighted the complexity of multilingual mediation, especially for learners from less-represented linguistic backgrounds.

Cultural misinterpretations further underscored the risk of reducing language to mere vocabulary. As shown in recent research by Makumane (2023), and Nyaaba et al. (2024), language learning is inherently linked to cultural literacy, and digital tools must be contextualized to avoid superficial understanding. Moreover, unequal access to devices and stable internet among students led to disparities in participation, echoing the findings of Laufer et al. (2021) and Gulzar et al. (2024), who observed that the digital divide continues to shape learning outcomes, even in tech-supported environments.

Distractions posed another challenge. As digital devices offered easy access to non-educational content, some students found it difficult to maintain focus. According to Hartley et

al. (2023) and Deng et al. (2024), the pervasive nature of mobile technologies can fragment learners' attention and reduce opportunities for deep engagement unless properly managed.

Overall, while technology served as a valuable support system, its use required careful monitoring and didactic intervention to mitigate negative effects on linguistic accuracy and intercultural understanding. These findings align with the cognitive-affective theory of learning with media and digital disconnection theory, which together highlight the importance of mindful and socially-aware use of technology in language education (Limbong et al., 2024; Schneider et al., 2022).

Technology Integration Practices in BIPA Class

The classroom practices observed reflected adaptive and reflective strategies in integrating technology, particularly in balancing digital and traditional learning modes. Teachers used tools like projectors, interactive games, and online platforms to make vocabulary more accessible and to increase student interaction. These practices support the conclusions of Moses et al. (2025) and Zaki et al. (2024), who found that blended learning approaches in language classrooms lead to better learner engagement and improved collaborative dynamics.

Both teachers demonstrated an awareness of the need to balance digital input with opportunities for authentic language use. Offline activities such as reading aloud and handwriting exercises were paired with audiovisual content to ensure that students developed core linguistic skills. This approach is consistent with the principles of Universal Design for Learning (UDL) as adapted by contemporary scholars like Ranbir (2024) and Wahyuni et al. (2025), who advocate for diverse instructional methods to cater to varying learner needs and reduce barriers to comprehension.

However, the effectiveness of these practices depended on teachers' ability to adapt to technical problems and student behavior. In situations where devices malfunctioned, teachers resorted to gestural communication or printed materials—a sign of pedagogical flexibility but also of systemic limitations.Moreover, the lack of specialized bilingual resources, particularly for languages with limited representation, restricted efforts to reduce reliance on translation apps. This reflects broader concerns raised by Ni (2023) and Castaño-Muñoz et al. (2025) who emphasize that digital inclusivity requires not just access but also culturally responsive content and tools.

Despite these constraints, the teachers' efforts represented an intentional blending of instructional modalities aimed at enhancing linguistic development while maintaining classroom interaction. These efforts align with the integration of the translanguaging framework and the socio-material theory of digital learning, both of which support flexible, context-responsive pedagogies that draw on multiple semiotic and technological resources (Ślęzak-Świat, 2022; Cenoz & Gorter, 2022).

CONCLUSION

This study showed that BIPA teachers and students recognized the benefits of technology in improving vocabulary acquisition and cultural understanding, but the effective use of technology had to be balanced and intentional. Learning strategies needed to combine digital tools with interactive and communicative approaches. Teachers had to design flexible lesson plans that considered students' varying access to technology and encouraged critical use of digital tools. The BIPA curriculum was recommended to include localized digital resources so that technology supported meaningful language learning. To support this, ongoing training for teachers in digital skills and instructional design was necessary, along with fostering

students' digital literacy and autonomy. Institutions had to ensure equitable access to technology, establish clear policies, and promote collaboration among educators. Future research was advised to explore how technology could support translanguaging and contextual learning in various educational settings.

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