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Flipbook Development with Automated Feedback for Upscaling Receptive Language Skills and Cultural Understanding of BIPA Learners

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ABSTRACT

The convergence of teaching materials and technologies, such as flipbooks, represents a new phenomenon in *Bahasa Indonesia bagi Penutur Asing* (BIPA) or Indonesian for Foreign Speakers. Flipbooks introduce new opportunities to integrate language learning and cultural exposure in the BIPA learning processes. This paper investigated the ability of BIPA learners to improve their receptive language skills alongside cultural adaptation through the use of flipbooks using automated feedback. The flipbook created in this study incorporates East Javanese cultural materials and is particularly intended for intermediate students. A quasi-experimental design study was used in which an experimental group learned with the flipbook, that provides automated feedback, and a control group learned with traditional or printed learning materials. Data was collected via receptive language skills and cultural understanding pre-and post-tests and by learner perception of questionnaires. Findings indicate that the flipbook used by learners resulted in a significant difference in improvement of listening and reading comprehension, followed by the deepening of ideas regarding Eastern Javanese cultural values compared with the control group. Systematic feedback was found to stimulate self-correction, aid personalised learning, and improve learner motivation and engagement. Overall, BIPA learners who used flipbooks with automated feedback significantly improved their receptive language skills and cultural knowledge when compared to those using traditional printed learning materials.

Keywords: Automated Feedback, BIPA learning, cultural understanding, flipbook, receptive language skills

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INTRODUCTION

Bahasa Indonesia bagi Penutur Asing (BIPA) has a strategic role in introducing the Indonesian language and culture to foreign students. In BIPA teaching, the teaching materials are not only aimed at cultivating learners' language competence but also at promoting intercultural communication, which can make an essential contribution to effective cross-cultural connections. BIPA also constitutes language diplomacy, an effort to enhance cultural visibility and soft power, thus placing the language as a bridge for intercultural relations and cooperation.

The burgeoning of educational technology developments in recent years has broadened the opportunities to deliver language and culture in a more interactive or performative manner (Aulia et al., 2025). It generally includes digital video and flipbooks to create multimodally framed learning content by considering learners' linguistic competency and cultural characteristics. This learning material digitalisation greatly enhances flexible approaches in education, learner-centred practices, and technology-based pedagogy.

As interactive digital publications, flip books offer an exciting reading experience, enriched with high-res images, audio/video clips, or links. Realising a better learning environment to boost comprehension and retention becomes totally possible through this multisensory process. Apart from linguistic outputs, flipbooks are plausible to enrich culture through positive imagery, contextual narrative, and multimedia storytelling. Furthermore, the automatic feedback in flipbook provides learners with corrective feedback, and it reinforces their implicit knowledge about performance toward personalised learning (Muzaki et al., 2024).

In BIPA learning, the cultural aspect is not a complement in the communication of meaning; it becomes the essence of communication itself (Suyitno, Fazwi et al., 2019). The students are exposed not only to types of language structures or lists of vocabulary, but also to values, symbols, and cultural forms that underlie social interactions in Indonesian society. The language we speak is a reflection of the way we see the world (Kramsch, 1993; Risager, 2006). This means that learning materials integrating linguistic and cultural representations are indispensable for the development of communicative competence and cultural literacy among BIPA learners.

Some studies have concentrated on product transformation, notably through the differentiation of local or national cultural components. BIPA materials with Indonesian cultural content were developed by Sudana et al. (2020). Sudana and her colleagues developed BIPA textbooks in which Indonesian cultural materials incorporate Balinese cultural values. Likewise, some researchers have investigated the integration of Javanese cultural values in BIPA learning. Murtianis et al. (2019), Saddhono et al. (2020) as well as Tanwin and Rosliani (2020) developed culture-based learning materials drawing on local customs in Central Java. In the domain of digital learning, Usman et al. (2024)

investigated the effects of flipbooks and e-learning platforms use in English teacher education, which found that learner motivation and achievement were improved. Similarly, Dewi and Wibawa (2024) reported a flipbook with integrated *Megedong-gedongan,* a cultural ceremony in Bali, was effective at enhancing students' science literacy and contextual knowledge of the local traditions.

Incorporating local culture into language study serves to strengthen a students' understanding of Indonesian national identity and raise their affective involvement. As Widodo et al. (2018) points out, integrating cultural values in teaching materials succeeds in elevating learners' interest and memory of learning, as it triggers an emotional response and a sense of its relevance. Failure to address any local cultural components, however, runs the risk of creating a kind of decontextualised language teaching that serves only to distance students from a living culture. To make learning culture more authentic, digital flipbooks deal with this gap through multi-modal meaning-making and interactive storytelling (Abdeen & Albiladi, 2021).

Related to these findings, previous studies have discussed how culture-based content meets digital learning resources. Aiming to improve context understanding and vocabulary learning, Mutiara and Emilia (2022) created flipbook learning media on Indonesian cuisine. Two other researchers, Syamsi et al. (2024) and Khaerunnisa et al. (2024), respectively incorporate linguistic and cultural aspects into a BIPA textbook and Betawi cultural elements into BIPA interactive multimedia teaching materials. Additionally, Jannah et al. (2021) and Wicaksono et al. (2021) also emphasised how crucial it is to integrate local wisdom into intercultural learning and used Flip Book Maker software to create interactive electronic resources for Indonesian language teaching. Thus, these findings revealed the promising prospects of digital platforms, flipbooks in particular, to foster culturally grounded learning for BIPA's students.

In the context of learning, it is essential to consider automatic feedback for reflective and efficient learning. It has been proven that learners can quickly identify their mistakes and rectify them after getting instant feedback, consequently speeding up the process of comprehending language forms as well as cultural elements (Nguyen & Takashi, 2021). Such immediacy in BIPA instruction context stimulates more profound learning since learners are able to calibrate how language and culture interact consistently in real environments where Indonesian is spoken.

The investigations into automated feedback also occurred in language education. Exploring the comparative effects of teacher, automatic, and integrated feedback on writing accuracy and learner anxiety, Haddadian (2024) pointed out that automated feedback has enhanced students' performance effectively since it reduces their anxiety. It was concluded that automated flash-noticing is rather successful at decreasing learners' anxiety while

enhancing their performance. Schiller et al. (2024) and Liu and Yu (2022) verified that clarity, quality, and precision of automatic feedback resulted in improved learner engagement and advancement. Moreover, Mertens et al. (2022) observed that surface-level and higher-order learning gains benefit from computer-based feedback, whereas Fleckenstein et al. (2023) found that automated feedback had significant impacts on writing performance at proficiency levels. Hahn et al. (2021) reinforced the positive impact on the digital learning and assessment environments of automated feedback. Despite these advances, research on the integration of flipbook-based learning materials equipped with automated feedback, especially in the context of BIPA learning to enhance both receptive language skills and cultural understanding, remains limited at this time. This study intends to fill that gap by investigating the effectiveness of such a model in intermediate-level BIPA instruction.

To address the gap identified in previous research, our aim here is to investigate Flipbook Development with Automated Feedback for Upscaling Reseptive Language Skills and Cultural Understanding of BIPA Learners for the Intermediate level. Furthermore, this study is a continuation of previous research in 2024 entitled Developing BIPA Teaching Materials while Containing East Javanese Culture (Susanto et al., 2024). The previous project developed printed teaching materials covering five thematic units on *Reog,* a display and dance from Ponorogo's cultural heritage. The present study builds the work by using a digital flipbook as an alternative to printed materials, integrated with automatic feedback, in order to increase engagement and interactivity; accessibility is also expected to be enhanced.

LITERATURE REVIEW

In the literature review section, (1) BIPA learning materials, (2) Automated Feedback, (3) flipbook, and (4) receptive language skills and cultural understanding are discussed.

BIPA Learning Materials

BIPA learning materials are indispensable resources for promoting the global identity of the Indonesian language and culture. For clarity and accuracy: BIPA is similar to ESL. BIPA is the teaching of Indonesian for foreigners, while ESL is the teaching of English for foreigners. The instruction of BIPA is intended not only to create communication competency, but also the understanding of intercultural relations among learners who come from various native languages (Tiawati et al., 2023). Learning materials, then, becomes the mediators between language and culture. Kamilla et al. (2023) argues that just as linguists are able to contribute their areas of expertise, significant additional input should be made so that materials will not only possess linguistic components, e.g., grammar, vocabulary, and syntax, but also cultural knowledge, values, and practices. Selecting and creating materials imbued with culture for foreign language teaching helps learners to better understand language

as a lived expression of culture and not simply an abstract system of rules.

Multimodal inputs: text, image, audio, and video can enrich students' understanding and engagement with digital resources (Widodo et al., 2018). The use of digital tools also encourages self-directed learning and sincere engagement with the target language and cultural contexts (Richards, 2015). From such a perspective, the movement from printed textbooks to digital resources in BIPA instruction can be seen as a paradigm shift and has brought BIPA learning more or less in line with international trends towards technology-mediated language learning.

Moreover, digitalisation of BIPA learning materials appears to be a reaction to technological development towards transforming the learning behaviours of international students. Widodo et al. (2018) affirmed that students may gain more understanding and be deeply engaged into the learning with the help of digital resources for multimodal inputs, such as text, image, audio, and video. Richards (2015) also confirmed that self-directed learning and sincere engagement with the target language and cultural contexts are the other advantages digital tools can offer. It suggests a paradigm shift where digital resources take over printed textbooks for BIPA instruction, which pushes BIPA learning towards technology-mediated language learning at an international level.

Fostering learners' intercultural competence is one of the concerns in BIPA learning, indicating the importance of local cultures (Byram, 2021). The cultural riches of East Java become huge supports for the inclusion of local cultures. Conforming to this, promoting empathy and intercultural understanding by encouraging students to participate in real-life interaction and appreciate the social roles that underpin interaction in Indonesia is a fundamental matter. Making sense of language in its vibrant social life showcases how culturally authentic BIPA instruction is, differentiating it from other learning materials that present themselves as simply linguistic thought objects, unbound to real situations.

Since digital learning materials, including flipbooks, foster exploratory, and self-regulated learning, they are suitable for intermediate-level learners. Iterative practice and immediate feedback have encouraged learners to hone their reading strategies autonomously while simultaneously expanding their cultural knowledge. It complies with prevailing principles in language pedagogy; experience, reflection, and interaction allow them to conceptualise learners as active constructors of knowledge (Richards, 2015). Moreover, integrating local narratives and sociocultural practices from East Java, as an example of embedding cultural content in digital flipbooks, enhances their pedagogical value. It puts them as mediational tools that bind linguistic forms to authentic cultural contexts. Consequently, it is noticeable that a pedagogically sound approach, embodied in digital flipbooks equipped with an automatic feedback mechanism, operationalises constructivist principles and

supports the integration of language and culture in BIPA instruction.

Richards (2015) proposed the principles of language teaching, and it was chosen as the theoretical framework of this study, the Flipbook Development with Automated Feedback for Upscaling Receptive Language Skills and Cultural Understanding of BIPA Learners. Richards underscores the priorities that effective language instruction must have. Those are comprehension-based activities and learners' exposure to authentic and contextualised input, supporting the focus on listening and reading as foundational receptive language skills. The other element he accentuated was the indivisible relationship between language and culture. He argued that whenever linguistic forms are embedded in sociocultural contexts, language learning becomes perfectly effective. These principles provide theoretical justification for the use of a culture-based digital flipbook with automated feedback as a pedagogical tool to enhance learners' receptive language skills.

Automated Feedback

Automatic feedback involves the use of computer-based systems that can react to learners' linguistic contributions to describe performance in-the-moment and facilitate self-correction. This system provides alternative options to traditional teacher-centred feedback by creating an atmosphere of learner autonomy and individual learning. In the language learning environment, such system-based feedback conditions support not only accuracy but also self-awareness and motivation as learners' own progress can be monitored independently from teachers' reactions (Nguyen & Takashi, 2021).

Furthermore, automated feedback is conducive to adaptive learning environments in which the feedback can be tailored to the learner's mastery level. It is beneficial for BIPA students with various language abilities. They acquire the ability to detect and adjust grammatical, lexical, or pragmatic mistakes effectively. These kinds of computerised systems supply corrective, explanatory, and metalinguistic information, which further enhance language acquisition (Dosse et al., 2024). In short, an example of a strategic move in BIPA pedagogy that makes efficiency and engagement possible without compromising personalised support is the automation of feedback in a digital space (e.g. by means of flipbooks).

Hence, the role of feedback on language accuracy and awareness should be noted by recalling the description of formative feedback given by De Freitas (2025). He declares it as information designed for reducing learner errors, enhancing understanding, and developing metalinguistic awareness. Technology advances offer automated feedback mechanisms that respond instantly and consider individual levels in students' input. To detect errors and suggest corrections, explanations, or exemplars, these systems utilise algorithms. These tools encourage "learn to learn" by giving real-time support, reducing dependence on educators' assistance, and maintaining motivation through instantaneous reinforcement.

The integration of interactive multimedia and automated feedback provides a double benefit, that is to increase learner engagement as well as to support adaptivity. Feedback-enabled flipbooks thus both provide interactive content and assist learners in identifying and correcting language errors independently. Such synergy is consistent with Zimmerman's (2002), The concept of self-regulated learning is based on self-paced learner control, monitoring, and reflection. In sum, the incorporation of media with automated feedback not only prevents student errors but also increases engagement and thus language acquisition.

Flipbook

A flipbook is a digital publication that combines audio, text, photographs, and illustrations in a way that draws inspiration from reading an actual book, but with additional elements such as sounds and moving images. Institutional flipbooks have been shown to enhance learners' motivation, understanding, and engagement in educational scenarios, given their multimodal attributes (Bikowski & Casal, 2018). In language learning, for example, flipbooks create an integrated environment of receiving visual images, hearing sounds, and reading words that help the learner create meaning and remember. The flipbook then becomes the locus for material-based comprehension.

Within the frame of BIPA instruction, flipbooks have the potential to present authentic cultural content in interactive and visually engaging ways. Flipbooks of cultural production may also situate cultural phenomena (e.g., traditional customs, arts, and social norms) in communicative tasks so that learners are more aware and sensitive to culture. Through automated feedback embedded in flipbooks, BIPA learners can immediately identify errors and obtain contextual explanations without having to constantly wait for teacher intervention, thus making the learning process more personalised and adaptive. For BIPA teachers, especially in multicultural and cross-border classroom contexts, this integration helps improve learning efficiency while encouraging the development of learners' metacognitive skills through continuous reflection on their learning processes and outcomes.

In addition, together with the automation of feedback, flipbooks represent smart learning environments that provoke immediate reflection and correct responses to further growth (Van & Baartman, 2019). Providing multimedia and feedback applications to students is a crucial step towards individual and experiential BIPA learning. In supporting the BIPA teaching process, digital media is projected to do more than merely provide access; it will also motivate learners and support the growth of learner autonomy (Pavlenko, 2025). One of the most recent additions to that trend is the interactive flipbook, which represents a teaching medium with digital capabilities. In closing, a flipbook adopts the print medium format with multimedia features such as video,

audio, animation, and quiz to design a multi-modal environment that enhances deep learning experiences (Putra et al., 2022).

Receptive Language Skills and Cultural Understanding in BIPA Learning

Foreign language learning encompasses the development of receptive and productive skills integrated into the communicative use of language. Receptive language skills, namely listening and reading, serve as the basis for understanding language input, while productive language skills, namely speaking and writing, reflect the learner's ability to produce language meaningfully in a social context. In foreign language teaching, both skills are inseparable from the cultural dimension, because language use is always influenced by the values, norms, and cultural practices of its speakers (Ermanto et al., 2025). Therefore, the integration of cultural elements in foreign language learning is essential so that learners are not only linguistically competent but also able to communicate appropriately and sensitively to the target culture in context (Liddicoat & Scarino, 2013).

The importance of receptive language skills (listening and reading) in second language acquisition is underlined by the fact that through these two means, students receive input that can be used for meaningfully constructed output. In BIPA teaching, receptive language competence allows learners to identify the grammatical forms, understand pragmatic meaning, and perceive sociocultural embedding contained within communication (Dulay et al., 1982). As a result, learners require exposure to authentic usages of Indonesian and culturally situated texts which represent 'real' Indonesian discourse through their listening and reading activities.

The perception of culture, on the other hand, is an intrinsic part of language proficiency. Language acquisition in the context of BIPA is not limited to implications of words or grammar, but extends to encompass meanings carried by culture, morals, and worldview that language represents (Kramsch, 1993; Risager, 2006). Learners, through cultural elements of local art forms, customs, and social practices incorporated into listening and reading materials, help to construct an understanding of intercultural sensitivity and communicative appropriateness (Suyitno, Susanto, et al., 2019). Accordingly, teaching materials that link receptive language skills with cultural comprehension are able to provide more holistic, meaningful learning experiences for BIPA students.

METHODOLOGY

Research Design

Using a quasi-experimental research design with a non-equivalent control group model, the present study investigated the impact of an automated feedback flipbook on developing BIPA learners' receptive language skills and cultural understanding. The experimental group was given a digital flipbook of the East Javanese cultural materials, whereas the control group used conventional or printed materials containing the same content.

In this quasi-experiment, the researcher could compare learning outcomes across groups in situ as they naturally occurred in real classroom activities, so that pedagogical authenticity was not lost. Two main measures, which were a receptive language skills test (listening and reading) and a cultural understanding questionnaire, were given before (pre-test) and after (post-test) the treatment. Moreover, a learner perception survey was applied to measure learners' attitudes toward the employment of flipbooks and automated feedback in terms of motivation, interactivity, and autonomy. Therefore, it can be said that this study uses a mix method of research design.

Participants

The participants of this study were intermediate-level students. The intermediate level refers to B1 and B2 according to CEFR, and BIPA 3 and BIPA 4 according to SKL. Meanwhile, according to ACTFL, it is divided into intermediate Low, Mid, and High. Intermediate BIPA learners are typically capable of comprehending and producing language in familiar contexts. At this stage, learners can process more complex linguistic and cultural information and are expected to expand their competence toward deeper interpretation and independent thought. Hence, teaching at an intermediate level requires a balance between linguistic demand and cultural representation so that students can engage in critical thinking as well as reflective learning.

The number of the participants of this study were 31 learners who have taken intermediate-level courses at BIPA Universitas Negeri Malang in East Java, Indonesia in the fall semester of 2025. The participants were assigned into an experimental (n = 16) and a control group (n = 15). The control group consisted of students from Malawi, Pakistan, Tanzania, Thailand, China, Taiwan, Yemen, Egypt, and Vietnam. While the experimental group consisted of international students from Afghanistan, Algeria, the Philippines, China, Taiwan, Yemen, and Sudan. The choice of the experimental and control classes was determined by the existence of intermediate classes in this particular program, the willingness to study authentic cultural texts, and their ability to benefit from feedback-centred instruction. The research setting was chosen for its multicultural environment, accommodating learners from various countries in Asia and Africa. This diversity clearly presents a rich context to evaluate how digital cultural materials can support cross-cultural learning and interaction in BIPA classrooms; the East Javanese flipbook is an example.

Research Instruments

This study utilises both quantitative and qualitative instruments. The instrument for collecting quantitative data comprised 30 multiple-choice questions. They are divided into 10 questions for listening comprehension, 10 questions for reading comprehension, and 10 questions for cultural understanding. Then, for the qualitative instrument, this study employed learner-perception questionnaires, which

are beneficial to measure satisfaction, motivation, and perceived autonomy in learning. These were reviewed and validated by two BIPA experts and two assessment experts from Universitas Negeri Malang to ascertain the instruments' validity, clarity, and reliability. Eventually, the research instruments were proven suitable for measuring the listening, reading, and cultural understanding skills of intermediate-level BIPA learners.

Research Procedure

The study runs four primary stages: (1) preparation, (2) implementation, (3) data collection, and (4) data analysis.

1. Using *Flip PDF Professional* during the preparation stage, the flipbook integrates East Javanese cultural content and automated feedback functions. The flipbook contains five units of material on East Javanese culture. Each unit covers a different aspect of East Javanese culture. Each unit incorporated receptive language skills (listening to audio conversations and reading texts), productive language skills (speaking and writing), grammar, and cultural understanding. Automated feedback function in the form of Google quizzes was embedded in the listening comprehension, reading comprehension, cultural understanding, and grammar exercises. Feedback appears instantly after students click the "Submit" and "Check Answers" buttons. Furthermore, this flipbook is distributed to teachers and students for use in intermediate classes.
2. The implementation stage took place over six weeks, from September 4 to October 9, 2025. A meeting with the teachers to distribute the flipbook was held on September 4. The quantitative instrument was used for a pre-test on September 11 and a post-test on September 18 and 25. Both Pre-test and post-test were held for two 100-minute sessions. Scoring results were grouped into three sections: listening, reading, and cultural understanding. The assessors for the control and experimental groups were teachers. Further, researchers collected qualitative data through classroom observations and students' perception surveys on September 25 for the control group and October 4 for the experimental group. The experimental group used the interactive flipbook, while the control group used conventional printed textbooks.
3. Data collection involved administering pre-tests before the intervention and post-tests afterward, along with learner perception surveys.
4. Data analysis focused on comparing score improvements between the two groups to determine the effect of the flipbook intervention.

Data Analysis

Quantitative data analysis was carried out by comparing the differences in scores between the control group and the experimental group in the aspects of receptive language skills (listening and reading) and comprehension of East Javanese culture.

Qualitative data analysis was carried out by describing and explaining words or sentences expressed by students from the control group and the experimental group about their experiences using flipbooks equipped with and without automated feedback features.

From the quantitative data (pre-test and post-test scores), an independent sample t-test was generated to investigate whether there were statistically significant differences in language proficiency progress between experimental and control groups. Conversely, observational and first-person report data were also analysed qualitatively with an observation grid and questionnaires in order to assess student learning and the effectiveness of automated feedback. Findings from this study are intended to confirm the research hypothesis that the use of flipbooks with automated feedback significantly enhances the receptive language skills and cultural understanding in BIPA learners when compared to traditional learning materials.

RESULTS

Results of Quantitative Analysis

Two groups of intermediate BIPA learners participated in this study: a control group (n = 15) that used traditional printouts and an experimental group (n = 16) that studied with flipbooks equipped with automated feedback programs. The two groups took pre- and post-tests measuring receptive language skills (listening and reading) and cultural knowledge. Tests were carried out prior to the inferential test to ensure that data met the assumption of a parametric test ($p > 0.05$). The comparison of the mean gain score between the groups using an independent samples t-test is given in Table 1.

Interpretation of Quantitative Results

The findings indicate a statistical difference between the experimental and control groups in all dependent variables ($p < 0.05$). Students receiving the flipbook

Table 1
Comparison of mean scores between control and experimental groups

Skill Areas	Groups	N	Pre-test Mean	Post-test Mean	Gain Score	t-value	Sig. (p)
Listening Comprehension	Control	15	68.20	74.13	5.93	3.42	0.002*
	Experimental	16	67.88	82.00	14.12	6.15	0.000*
Reading Comprehension	Control	15	70.47	75.53	5.06	2.98	0.005*
	Experimental	16	69.81	83.69	13.88	6.42	0.000*
Cultural Understanding	Control	15	65.33	71.60	6.27	3.75	0.001*
	Experimental	16	64.75	80.38	15.63	6.88	0.000*

with automatic feedback were significantly better at achieving improvements in receptive language skills, specifically listening and reading comprehension, as well as one cognitive variable, cultural knowledge.

The average change in listening score for the experimental group (14.12 scores) is more than two times that of the control group (5.93 scores). Also significant were differences in reading comprehension (13.88 vs 5.06) and cultural understanding (15.63 vs 6.27). These findings led us to a learning process that shows accelerated processing times, upgraded comprehension, and more consistent learning results by integrating automated feedback.

Results of Qualitative Analysis

Several students stated,

> *Saya senang belajar pakai flipbook yang ada fitur koreksi otomatisnya. Dengan fitur ini, saya langsung tahu salah saya dan bisa koreksi sendiri.* [I enjoy learning using flipbooks with automatic correction features. With this feature, I can immediately see my mistakes and correct them myself.]

Another statement was,

> *Gambar-gambar dan cerita dari Jawa Timur menarik bagi saya dan buat saya ingin belajar lebih budaya Indonesia*. [the pictures and stories from East Java made me more interested in learning and want to learn more about Indonesian culture.]

According to most of the participants in the experimental group, the flipbook helped them reason for themselves and correct their mistakes through interactivity, as well as immediate feedback. Learners also reported that the cultural elements contained in the flipbook such as pictures, short videos and original East Javanese stories raised their motivation and interest of Indonesian traditions. Observation notes also documented that the experimental groups were more active, self-assessed more frequently, and were eager to speak about cultural content compared to the control. This is consistent with Nguyen and Takashi (2021) conclusions that automated feedback promotes learner autonomy and reflective learning in second language learning.

DISCUSSION

The results of the study indicate that the use of East Javanese culture-based flipbooks featuring automated feedback has a significant impact on improving receptive language skills and cultural understanding of intermediate-level BIPA learners. In addition, the integration of local cultural content in flipbooks has been shown to deepen learners' comprehension of East Javanese cultural values. The presence of automated feedback also encourages self-correction, more personalised learning, and increased learner motivation and engagement during the learning process, so that overall digital flipbook-based learning is more effective than traditional learning.

The results of this study support the literature that has already been written, that

is, BIPA teaching is not only concerned about linguistic skill but also intercultural sensitivity (Asteria et al., 2023). According to Kramsch (1993) and Risager (2006), language is culture and vice versa. What this means is that, on the one hand, we use the instrument of culture, which is the language, and then on the other, language also has its way of existing. The dramatic increase in cultural understanding within subjects of the test group can be assumed when the learning process includes local (East Java) orientated content. This sample under consideration provides its learners with additional support to pragmatically correlate forms and functions with real cultural meanings. This is consistent with Widodo et al. (2018) argument that local culture will enhance cognitive and affective engagement in language resources.

The results also suggest that digital flipbooks can be used as multimodal learning devices to help engage students in understanding a theory better. By using texts and images along with sound, flipbooks are able to create an enhanced semiotic environment in which meaning can be made. This is in line with the assertion by Bikowski and Casal (2018) that multimodal input favours different learning styles and enhances understanding through the activation of more than one sensory channel. In BIPA learning, such multimodal presentation supports learners to visualise abstract linguistic phenomena and situate them in Indonesian cultural contexts. The increase in listening comprehension in this study may demonstrate the efficacy of flipbooks in linking linguistic and cultural input.

Moreover, incorporating automated feedback in the flipbook was instrumental in promoting learners' improvement as it offered instant and personalised feedback about their performance. This is in line with Nguyen and Takashi's (2021) claim on the role of timely automated feedback in promoting self-regulated learning, that would also help learners to monitor and correct their errors autonomously. Automatic feedback is unlike timely feedback that teachers provide during traditional education, which is dependent on the teacher's presence in the student's communication and practice process. Automatic feedback thus creates better learning loops between comprehension and incorporation. The current results indicate that the experimental group participants engaged in more self-correction and were more accurate on comprehension tasks. This data supports the argument that technology-mediated feedback plays a facilitating role in learner autonomy and confidence.

The automated feedback embedded in digital learning environments is an example that reflects modern pedagogical theories, underscoring learners' centrality, interaction, and individualism. Dosse et al. (2024) enlightened us that learning using digital platforms can be personalised to each student to make instructions more meaningful because they are able to concentrate on specific learners' needs. Concerning the situation in BIPA program where students' linguistic and cultural

backgrounds vary, adaptive feedback can help chart their own psychological profile. It is especially helpful when students deal with the Indonesian language and its cultural particularities. Instruction can be relevant, fair, and responsive to the learning milieu of a classroom in the global context due to this pedagogical variation.

The distinction of multimodal input in second language learning has been reflected through the enhanced receptive language skills, listening, and reading perception of experimental group students. Taking part in this discussion, Goh and Vandergrift (2021) believed that the combination of auditory, visual input, and situational cues has made listening comprehension grounded. The flipbook's audio narration, visual graphics, and embedded text have enabled learners to obtain extensive exposure. These can scaffold their comprehension through presentations that involve repetition and context. The affirmation is also evident in reading materials containing numerous cultural pictures, which stimulate students to draw inferences and retain new words. These results exhibit the idea that multimodal layout and automatic feedback boost receptive processes and the depth of processing language input.

Apart from the advantages in learning a language, this study elaborates on effective components of cultural engagement. Cultural narratives and symbols evoked emotional resonance and personal relevance that lower anxiety and enhances motivation. The respondents explained that experiences which directly exposed them to East Javanese culture gave more meaningful and enjoyable learning experience by bringing them even closer to Indonesian culture. This corresponds to Viartasiwi et al. (2021) who claim that cultural learning in BIPA is a cultural diplomacy program of sorts where learners are rendered informal ambassadors of Indonesia abroad. Accordingly, digital materials that incorporate cultural content do not only produce communicative competence but also serve as a soft power for Indonesia.

It was reasonable to choose intermediate learners as research participants because at that stage, learners have already been exposed to challenging language and cultural materials. Intermediate learners have an emerging grammatical system and are increasing in competency towards fluency in interpreting and performing linguistic tasks. Intermediate students, according to Richards (2015), require both linguistically challenging and contextually rich input. The immediacy of multimedia materials and automated feedback in a flipbook are ideally tailored to this learning stage, where learners can transition from face value comprehension to interpretative understanding. The remarkable enhancement of their receptive and cross-cultural competencies affirms that technology-enhanced materials are appropriate for this proficiency level.

The general results have pedagogical and sociocultural applicability. They pedagogically endorse that technology, feedback, and culture can be integrated in BIPA teaching to enhance comprehensive

language acquisition. Culturally, with the digitalisation of East Javanese culture through interactive flipbooks, a new model for distributing Indonesian's linguistic and cultural interests emerges. By working synchronically through genuine local materials, learners gain not only the Indonesian language but also absorb cultural values, traditions, and worldviews. Therefore, the application of flipbooks supported by ICT with feedback features provides not only an educational novelty, but also an electronic GPS between language learners and their native-speaking peers.

This study shows that by using a flipbook with automated feedback to learn reading strategy, advanced BIPA learners can take advantage of support in their receptive language skills and intercultural competence. The results of the quasi-experiment demonstrate that: 1) students in the experimental group had better performance than those in the control group in terms of listening and reading comprehension, and 2) students in the experimental group also outpaced the COI protocol in comparison to students in the control group. The audio, text-images, and text-video multimodal dimensions of the flipbook assisted learners' intake processing, immersed them more fully in the content matter, and exposed them to linguistic forms in culturally authentic contexts. The promoting role of automated feedback in the enhancement might leave its mark on learner autonomy, self-correction, and a variety of individual learning contexts as well.

Apart from the linguistic skills they acquired, students reported generating a substantial body of cultural knowledge in Indonesia, in particular East Javanese culture. The surveys indicate that cultural storytelling and images embedded in the flipbook enhanced intercultural sensibility and affective engagement with learners' target culture. Learners could associate the linguistic form with its sociocultural connotations, and the preferred material seemed to mediate between culture and language in a manner that was meaningful and interactive. In this light, the evidence from this data indicates that digitally enriched cultural resources prove to be formidable tools in the development of lingual and cross-cultural competences in BIPA teaching.

Underlining that BIPA learning is oriented towards mastering linguistic skills and developing intercultural understanding and sensitivity makes the results of this study strongly aligned with previous research findings. This study determines that the integration of East Javanese local cultural content and flipbooks has truly deepened learners' cultural understanding. It confirms its consistency with the views of Kramsch (1993) and Risager (2006) since language and culture are interrelated entities. Another consistency can be seen in the statement of Widodo et al. (2018), who assert that local culture can enhance learners' cognitive and affective engagement. Furthermore, the findings of Bikowski and Casal (2018) and Goh and Vandergrift (2021) disclose the improvement in listening and reading skills

in the experimental group. He emphasises the importance of multimodal input to support receptive language processing by activating various sensory channels.

Concerning the strategic role of automated feedback in digital-based BIPA learning, this study also expands and differentiates previous findings by highlighting this exact concern. While previous studies underscore flipbooks' effectiveness as a multimodal medium, the results of this study point out that automated feedback provides a significant additional contribution to self-correction, comprehension accuracy, and learner motivation. This conclusion supports the findings of Nguyen and Takashi (2021) and Dosse et al. (2024) regarding rapid and personalised feedback in encouraging independent learning and personalised learning. Unlike conventional feedback, greatly relying on teacher presence, automated feedback in flipbooks creates a more sustainable and adaptive learning cycle of BIPA. BIPA learners have linguistic and cultural backgrounds. Thus, this study both asserts previous findings and emphasises the added value of integrating automated feedback technology for refining language and cultural competencies in intermediate-level BIPA learners.

The pedagogical and diplomatic implications have paved the way for integrating digital enhancements (e.g., automatic feedback having flipbook features), through the same paved way for integrating digital enhancements (e.g., automatic feedback having flipbook features) in BIPA and supports learning preferences. This study has provided evidence for Indonesia's National and local governments to improve language instruction and cultural diplomacy through education. While it may be similar to a textbook, the flipbook is more than that; it exists as an entertaining education medium that transmits East Javanese culture and customs, which can be used to advance Indonesian media into the bones of the global curriculum.

CONCLUSION

This study concludes that an East Javanese culture-based flipbook integrated with automated feedback is effective in improving the receptive language skills and cultural understanding of intermediate-level BIPA learners. Furthermore, the presence of automated feedback in the flipbook was found to stimulate self-correction, support more personalised learning, and enhance learner motivation and engagement throughout the learning process. Therefore, flipbooks equipped with automated feedback have strong potential as innovative instructional media for fostering the sustainable development of BIPA learners' linguistic and cultural competencies.

In addition to linguistic gains, the integration of cultural narratives and visual elements within the flipbook fostered intercultural awareness and emotional engagement with the target culture. To suggest that the digital material successfully bridged language and culture in an interactive and meaningful way, learners

were indeed able to connect their linguistic expressions to sociocultural meanings. In general, to advance both linguistic competence and intercultural understanding in BIPA instruction, the findings of this study elaborate that culturally embedded digital learning materials can serve as powerful tools for advancing both linguistic competence and intercultural understanding in BIPA instruction.

The findings of this study convey essential pedagogical and diplomatic implications. They underscore the potential of integrating digital innovations pedagogically, such as flipbooks with automated feedback into BIPA instruction to create more adaptive, interactive, and culturally grounded learning experiences. For educators, this approach provides a model for developing multimodal materials aligned with learners' needs and modern learning behaviours. Culturally, the study supports Indonesia's mission, which is promoting linguistic and cultural diplomacy through education. To say that the flipbook serves not only as an instructional medium but also as a digital cultural ambassador strengthening Indonesia's presence in global education is definitely possible. It happens by making digitised East Javanese culture within an engaging learning platform.

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