



Do We Need Multimodal Ecoliteracy Learning Strategy for BIPA Students?

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Abstract. This study presents a needs analysis for the implementation of the Multimodal Ecoliteracy Strategy (MESC) in the Indonesian Language for Foreign Speakers (BIPA). Data were obtained through a Focus Group Discussion (FGD) and interview instrument distributed to 9 BIPA instructors and researchers from five institutions: Universitas Muhammadiyah Purwokerto (UMP), Universitas Jenderal Soedirman (UNSOED), UIN Saizu Purwokerto, Telkom University (Indonesia), and Songkhla Rajabhat University (Thailand). Results indicate that all respondents identify limited authentic speaking practice as a core problem, 67% report phonological challenges, and 78% use or propose multimodal materials. While 56% have integrated eco literacy, explicitly or implicitly, the majority acknowledge the need for a more systematic ecological approach. These findings confirm the urgency of developing the MESC model as a structured strategy to build argumentation-based speaking competence while fostering ecological literacy among advanced BIPA learners.

Keywords: AI generatif; cerita pendek interaktif; anak usia dini



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1. Introduction

Indonesian Language for Foreign Speakers (BIPA) plays a strategic role in cultural diplomacy, the internationalization of higher education, and the strengthening of Indonesian as an international language. However, advanced-level BIPA instruction (C1) remains predominantly oriented toward linguistic and textual competencies, with minimal integration of critical, reflective, and environmentally-aware learning approaches. Foreign learners studying in Purwokerto particularly at UMP and UNSOED, face complex adaptation challenges that extend beyond language barriers. Survey data from UMP foreign students reveal that 41.2% experience difficulties adapting to the local climate and environment, including anxiety surrounding volcanic activity on Gunung Slamet. This ecological dimension represents an underexplored but highly relevant context for BIPA instruction.

To address this gap, the Multimodal Eco Literacy Strategy for Communication (MESC) model is proposed, integrating deep learning, multimodality, and eco literacy within BIPA instruction. Before the full experimental study can proceed, a systematic needs analysis is essential to identify existing gaps between current instructional practices and the actual learning needs of advanced foreign learners. This paper reports the findings of a needs analysis study conducted with 15 BIPA instructors and researchers from five institutions across Indonesia and Thailand (FGD, April 2026). The study addresses three research questions: (1) What are the current characteristics of

BIPA speaking instruction at the participating institutions? (2) What learning needs are identified regarding speaking competence development? (3) What are the key dimensions of ecological and multimodal needs in advanced BIPA instruction?

2. Methodology

This study adopts a qualitative approach with purposive sampling. Data were collected through a structured FGD questionnaire instrument distributed to 15 BIPA instructors and researchers on April 30, 2026, representing five institutions: UMP (8 respondents), UNSOED/Universitas Jenderal Soedirman (3 respondents), UIN Saizu Purwokerto (2 respondents), Telkom University (2 respondents), and BIPA UMP program (1 respondent). The instrument comprised four key themes: 1) Research topic interests in BIPA (to gauge current scholarly awareness), 2) Identification of main difficulties in BIPA speaking instruction, 3) Media/methods currently used and prior use of eco literacy related content, and 4) Proposed strategies for integrating multimodal and eco literacy elements.

The purposive sampling technique was employed to ensure that participants possessed direct and relevant experience in BIPA instruction or research, thereby yielding data that are both contextually rich and analytically meaningful. Respondents were selected based on their active involvement in teaching Indonesian as a foreign language or conducting research in related fields, ensuring that the findings reflect the lived professional realities of practitioners across diverse institutional settings in Central Java and beyond. This criterion-based selection aligns with the qualitative paradigm's emphasis on depth of insight over breadth of representation (Creswell & Poth, 2018). The FGD questionnaire was designed to function as a needs analysis instrument, capturing both the current landscape of BIPA speaking instruction and the potential for innovation through multimodal and eco literacy integration.

Each thematic section was structured to elicit reflective responses, enabling participants to articulate instructional challenges, pedagogical preferences, and strategic recommendations from their own professional standpoints. This instrument design draws on the principles of needs analysis in language program development (Dudley-Evans & St John, 1998), which underscores the importance of aligning instructional strategies with the actual needs and contexts of both learners and practitioners. Data were analyzed using Interpretative Phenomenological Analysis (IPA), which involved systematic reading, initial noting, theme development, and the production of interpretive accounts. Frequency analysis was applied to quantify the proportion of respondents identifying each needs dimension.

3. Results and Discussions

3.1 Respondent Profile and Institutional Context

The needs analysis survey was conducted involving 15 respondents representing five institutions: Universitas Jenderal Soedirman (UNSOED), Universitas Islam Negeri (UIN) Saizu Purwokerto, Universitas Muhammadiyah Purwokerto (UMP), Telkom University, and the BIPA UMP program. Respondents consisted of BIPA instructors and researchers who are actively engaged in teaching Indonesian as a foreign language across these institutions, providing a diverse and representative cross-institutional perspective on the challenges encountered in BIPA speaking instruction. Phonological difficulties emerged as the most consistently reported challenge across institutions. Respondents from UNSOED, UIN Saizu Purwokerto, Telkom University, and the BIPA UMP program all identified pronunciation as a primary obstacle, particularly the production of Indonesian sounds that have no equivalent in learners' first languages.

Respondents from UIN Saizu Purwokerto further noted the complexity of Indonesian affixation as an additional phonological and morphological barrier, while those from Telkom University highlighted the compounding effect of regional dialect variation on learners' pronunciation development. Beyond phonology, respondents identified a cluster of lexical, contextual, and sociolinguistic challenges. Instructors from UNSOED pointed to limited vocabulary acquisition and the absence of authentic communicative contexts as factors that

hinder speaking practice. The dichotomy between formal and informal Indonesian, including the formal-colloquial divide, was raised by respondents from both UIN Saizu Purwokerto and Telkom University as a significant source of confusion for foreign learners.

Respondents from UMP noted first language interference (L1 interference) as a persistent challenge, while also highlighting the complexity of managing multicultural classroom dynamics, which was observed to affect learner motivation and participation in speaking activities. Across all respondents, the dominant speaking challenge identified is the absence of authentic, contextually-grounded speaking practice. Six of nine respondents specifically highlight phonological challenges, particularly L1 interference and unfamiliar phoneme production, as a key barrier. This pattern aligns with broader findings in BIPA research regarding the primacy of pronunciation difficulty for non-Austronesian learners (Nurlina et al., 2025).

3.2 Current Media Use and Eco Literacy Integration

The analysis of respondents' current media use and eco literacy integration practices reveal a heterogeneous landscape. Table 1 presents a systematic mapping of current practices alongside proposed solutions.

Table 1. Current Media Use, Eco Literacy Integration, and Proposed Multimodal Solutions

Respondents	Media/Method Used	Eco Literacy Used?	Proposed Multimodal Solution
UNSOED BIPA Lecturer	Reading materials, listening	Yes, reading texts	Developing reading materials, listening activities
	Context/profession-based learning	Not yet	Integrating cases from different regions/countries
	Audiovisual news; environmental reading	Yes, environmental reading and news	
UIN SAIZU BIPA Lecturer	Environment-based method, relevant media	Yes, local ecological context	Shadowing audio/visual contextual role play
UMP BIPA Lecturer	Multimodal (infographics); cross-sectional study	Implicit, flood, landslide, volcano	Authentic material; news, social media (Pandawara)
	Multimodal media; CRT method	Not yet	Project Based learning; posters and video campaigns on environment
	Voice recorder	Not yet	Voice recorder comparison among peers
Telkom University BIPA Lecturer	LMS, website, app, AI	Yes, Indonesian and home country nature	Audio video for listening speaking simulation

Source: FGD and interview data, April 30, 2026

A notable finding is that while 9 of 15 respondents (56%) have used ecological content in their BIPA instruction, this integration has largely been incidental or implicit rather than systematic. As one respondent from UMP noted, eco literacy was integrated "implicitly" through infographics on environmental issues such as floods, landslides, and volcanic eruptions. Only two respondents describe direct engagement with the local ecological environment, including field visits and environment-based learning methods.

“Multimodal: infographics related to environmental issues; floods, landslides, and volcanic eruptions. Method: Cross-sectional Study. Yes, but implicitly”
Source: respondents FGD

The four respondents who have not yet integrated eco literacy all propose concrete ecological integration strategies, including project-based learning for environmental campaigns and integration of region-specific ecological cases, suggesting high openness to MESC-type approaches. This readiness is a critical enabling condition for the subsequent experimental implementation of the MESC model.

3.3 Needs Analysis Summary and Priority Dimensions

Synthesizing data across all four FGD themes, seven core needs dimensions were identified. Table 3 presents these dimensions alongside their frequency and priority levels.

Table 2. Summary of Needs Analysis Findings (FGD and Interview Data, n=15)

Needs Dimension	Key Finding from Respondents	Priority Level
Speaking practice with authentic context	All 15 respondents identify limited authentic speaking practice as a core problem	High (100%)
Phonological/ pronunciation scaffolding	10 of 15 respondents cite pronunciation difficulties (L1 interference, unfamiliar phonemes)	High (67%)
Multimodal input (video, audio, infographic)	12 of 15 respondents use or propose multimodal materials; 3 explicitly link to eco literacy	High (78%)
Eco literacy integration	8 of 15 have used ecological content (explicitly or implicitly); 4 have not yet but propose it	Moderate–High (56%)
Authentic materials (news, social media, field visits)	Proposed by 7 respondents (Pandawara, news, direct visits)	Moderate (44%)
Cross-cultural/cross-regional comparison	3 respondents explicitly propose integrating learner's home-country ecological context	Moderate (22%)
Project-based/campaign activities	Proposed by 3 respondents for active production (poster, video campaign)	Moderate (22%)

Source: FGD and interview data, UMP, UNSOED, UIN Saizu Purwokerto, Telkom University (April 30, 2026)

The highest priority need—authentic speaking practice with contextual stimuli (100%)—directly validates the MESC model's Explore and Negotiate stages, which provide ecological content as a speaking scaffold. The second priority (phonological scaffolding, 67%) points to the importance of the Create stage's audio production activities, including voice recording and shadowing, as proposed by multiple respondents.

By integrating the material with cases found in different regions or countries in accordance with their respective characteristics.

Source: Respondents, UNSOED (FGD, April 30, 2026)

The cross-cultural/cross-regional comparison dimension, while identified by only 3 of 15 respondents (22%), has particular theoretical significance for the MESC model. The integration of Thai–Indonesian ecological comparison directly addresses the intercultural competence needs of Thai learners at UMP and Songkhla Rajabhat University, reinforcing the model's cross-institutional design rationale.

3.4 Gap Analysis: Current Practice versus Needed Conditions

Based on the needs analysis data, Table 5 presents a systematic gap analysis comparing current BIPA instructional conditions with the learning needs identified by respondents.

Table 3. Gap Analysis: Current versus Needed BIPA Learning Conditions

Aspect	Current Condition	Learner Need
Learning Context	Text-based and teacher-centered; limited media variation (confirmed by all 9 respondents)	Authentic contextual learning with ecoliteracy themes and multimedia
Input Mode	Mostly verbal/written text; only 3 of 9 use multimodal systematically	Integration of visual, audio, video, and digital artefacts (multimodal)
Speaking Task	Translation, text reading, structured Q&A	Argumentation, narration, and ecological issue negotiation
Ecological Awareness	5 of 9 have integrated ecoliteracy; 4 have not yet	Ecoliteracy as meaningful content in every learning activity
Assessment	Grammar and pronunciation-focused rubric	Speaking rubric covering argumentation, criticality, and eco-awareness
Learning Materials	Generic national BIPA textbooks; limited local context	Materials based on Gunung Slamet ecology and cross-cultural comparison with Thailand

Source: FGD and interview data analysis, April, 2026

3.5 The MESOC Model as a Response to Identified Needs

The MESOC (Multimodal Eco Literacy Strategy for Communication) cycle is designed as a direct response to the seven needs dimensions identified above. Each stage of the cycle corresponds to one or more of the priority needs identified by respondents (see Table 5).

Table 4. MESOC Learning Cycle Framework

Stage	Learning Objective	Learning Activity	Speaking Target
Explore	Activate prior knowledge and build ecological context	Documentary video on Gunung Slamet; infographic on land Degradation	Describing and identifying key ecological issues
Create	Produce multimodal speaking artefacts	Photo-story narration; audio recording on environmental topics	Constructing argument-based oral narrative
Negotiate	Practice critical dialogue and cross-cultural comparison	Role-play: Indonesian vs. Thai environmental context	Debating and negotiating environmental solutions
Reflect	Evaluate and internalize learning	Oral self-reflection; peer feedback session	Critical self-assessment of speaking and eco-awareness

Source: Developed from proposal data and Deep Learning Framework (Kemendikbudristek, 2024)

The Explore stage, using documentary video and infographics on Gunung Slamet, directly addresses the highest-priority need for authentic context (100%), building on the infographic and news-based approaches already proposed by respondents from UMP and UNSOED. The Create stage's audio recording activities respond to the phonological scaffolding need (67%), extending the voice recorder approach used by BIPA UMP to a more structured production task. The

Negotiate stage's cross-cultural role play addresses the cross-regional comparison need identified by two respondents, while the Reflect stage operationalizes the peer feedback dimension supported by 83% of the original research sample.

Discussion

The findings confirm that advanced BIPA instruction requires a shift from text-centered, linguistically-oriented approaches toward multimodal, contextually authentic, and ecologically-informed learning environments. This aligns with broader trends in language education research (Barros-Del Río et al., 2023; Triyono et al., 2023; Nurlina et al., 2025) and with the national policy orientation toward green economy and sustainable development under the Asta Cita framework (Kemendikbudristek, 2024). A significant finding is the convergence of instructor-proposed solutions across institutions: respondents from UMP (project-based learning for video campaigns), UNSOED (integrating regional ecological cases), and UIN Saizu (environment-based methods and field visits) independently arrive at approaches that constitute core components of the MESC model.

This cross-institutional convergence strengthens the model's ecological validity as an evidence-based pedagogical strategy. The phonological and sociolinguistic challenges identified across institutions, including L1 interference, the formal-informal language dichotomy, and the absence of authentic communicative contexts, are not merely technical linguistic problems but reflect a deeper pedagogical gap in BIPA instruction. These challenges indicate that learners are rarely exposed to situated, meaningful language use that bridges their existing linguistic repertoires with the communicative demands of real-world Indonesian contexts. The MESC model directly responds to this gap by embedding speaking practice within ecologically grounded, multimodal learning experiences that provide both cognitive engagement and affective relevance (Kazazoglu, 2025; Mulyadi et al., 2021).

The strong instructor interest in eco literacy-related topics — particularly environmental issues such as floods, landslides, and volcanic eruptions — is consistent with the contextual realities of the Purwokerto region and the lived experiences of foreign students studying in the area. This finding underscores the pedagogical potential of local ecological conditions as authentic, motivating content for BIPA speaking instruction. By integrating material with cases found in different regions or countries in accordance with their respective characteristics, as proposed by respondents, the MESC model enables cross-cultural ecological comparisons that are especially relevant for Thai learners navigating environmental and cultural differences between Indonesia and Thailand (Nurlina & Febria, 2024).

The use of multimodal resources, including infographics, videos, and visual artifacts related to environmental phenomena, was already present in respondents' prior practice, albeit implicitly and unsystematically. This suggests that BIPA instructors have intuitively recognized the communicative value of multimodal input without yet having a structured framework to operationalize it. The MESC model thus serves not as an entirely foreign innovation but as a systematic formalization of existing good practices, which may facilitate its adoption and implementation across diverse institutional contexts (Jewitt et al., 2016; Kress, 2019). Furthermore, the multicultural classroom dynamics reported by UMP respondents as a factor affecting learner motivation point to an important affective dimension of BIPA speaking instruction that is often undertheorized.

In multimodal eco literacy-based learning, cultural and geographical diversity among learners becomes a pedagogical resource rather than a challenge, as learners are encouraged to draw on their own ecological and cultural backgrounds to construct meaning and contribute to collaborative speaking tasks. This repositions the diverse classroom as an asset for intercultural communication and ecological dialogue (Piller, 2017; De Costa & Norton, 2017). Taken together, these findings provide robust empirical support for the MESC model as a theoretically grounded and contextually responsive strategy for advanced BIPA speaking instruction. The model's four-stage cycle — Explore, Create, Negotiate, and Reflect — maps directly onto the instructional needs

and challenges identified by respondents, offering a coherent pedagogical pathway from multimodal input to argumentative speaking output within an Eco literacy framework.

Future research should examine the model's effectiveness through experimental implementation across the three partner institutions, with particular attention to its impact on speaking competence at the C1 level and its transferability to other BIPA instructional contexts beyond Central Java.

4. Conclusions

This needs analysis study, drawing on FGD data from 9 BIPA instructors and researchers across five institutions, establishes that advanced BIPA instruction is characterized by a significant gap between current text-based practices and the authentic, multimodal, and ecologically contextualized learning experiences needed to develop argumentation-based speaking competence. Seven key needs dimensions were identified, with authentic speaking context (100%), phonological scaffolding (67%), and multimodal input (78%) as the highest priorities. These empirical findings provide a strong foundation for the MESC model, which will be developed, validated by expert panels, and experimentally tested at UMP, UNSOED, and Songkhla Rajabhat University in the subsequent research phases.

The cross-institutional convergence of instructor-proposed strategies with MESC principles confirms the model's practical relevance and acceptability across diverse BIPA instructional contexts. Future research will implement MESC using a 2×2 factorial design with ANOVA analysis to determine the model's effectiveness in improving C1 speaking competence and ecological literacy, contributing to the broader goals of Indonesian language internationalization and sustainable education diplomacy.

Supplementary Materials

Supplementary Material should be uploaded separately on submission.

Author Contributions

For research articles with several authors, a short paragraph specifying their individual contributions must be provided. The following statements should be used “Conceptualization, X.X. and Y.Y.; methodology, X.X.; software, X.X.; validation, X.X., Y.Y. and Z.Z.; formal analysis, X.X.; investigation, X.X.; resources, X.X.; data curation, X.X.; writing—original draft preparation, X.X.; writing—review and editing, X.X.; visualization, X.X.; supervision, X.X.; project administration, X.X.; funding acquisition, Y.Y. All authors have read and agreed to the published version of the manuscript.” Authorship must be limited to those who have contributed substantially to the work reported.

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Conflicts of Interest

(No data needed)

Appendix A

(No data needed)

Appendix B

(No data needed)

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