



Developing a hybrid learning model for Indonesian language instruction integrating local wisdom: Evidence of validity and practicality

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Abstract

The increasing use of hybrid learning in language education has not been fully matched by the development of models that are sensitive to local social and cultural contexts. This study aims to develop and evaluate the Hybrid Mode Indonesian Language Learning (PBIMH) model through a formative research approach that positions teachers as co-designers throughout all stages of development. A total of 28 teachers from professional education programs in Banda Aceh and Aceh Besar were actively involved in the design process, limited trials, and iterative reflection. Data collection was carried out through expert validation, questionnaires, and reflective feedback to assess the validity and practicality of the model. The analysis results showed a high level of content and construct validity with an average of 4.51 (SD = 0.53), with expert construct assessments ranging from 87.5–95, which is classified as very acceptable. The practicality test showed a positive response from teachers, with an average score of 4.51 (SD = 0.58). The novelty of the research lies in the systematic integration of local wisdom into a hybrid learning structure through collaborative and formative mechanisms. PBIMH was deemed valid, practical, and provided a conceptual contribution to the development of context-based language learning.

Keywords: Hybrid learning model, Indonesian language instruction, Local wisdom, Practicality, Validity, Collaboration.

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Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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Contribution of this paper to the literature

The paper's primary contribution is finding that Acehnese local wisdom has strong potential for integration into Indonesian language learning models. This integration not only enriches teaching materials but also increases contextual relevance, strengthens students' cultural identity, and encourages active engagement in meaningful and sustainable learning processes.

1. Introduction

Teaching Indonesian requires a learning model that not only meets curriculum requirements but is also responsive to technological developments and the socio-cultural context of students. In Aceh, local wisdom represents a rich source of values, knowledge, and perspectives on life that are closely related to students' daily experiences. In current teaching practice, Acehnese local wisdom is rarely used systematically as a basis for Indonesian language learning. Teachers often rely on teaching materials that are not relevant to the local context, which can reduce the relevance and authenticity of learning and limit students' understanding of Acehnese cultural values.

The integration of local wisdom into Indonesian language learning is still relatively limited, even though local cultural elements play an important role in shaping students' social attitudes, moral values, and character, which influence their future development (Usman, 2021). When learning materials are not related to students' life experiences, the learning process tends to be less meaningful and less effective. Indonesian language learning needs to be designed by utilising learning resources that originate from the students' social and cultural environment, and supported by adequate learning planning and facilities.

One of the challenges that often arises in Indonesian language learning is students' understanding of biographical texts. Research shows that students often have difficulty understanding the content and exemplary values in biographical texts when the figures and contexts presented are not familiar to them, resulting in low learning achievement (Telaumbanua, Zega, & Halawa, 2022). Various innovations have been made to overcome this problem, for example, through the use of Canva-based learning media (Saraswati & Setiastuti, 2023) as well as the development of Android-based digital teaching materials (Malia & Hardianto, 2022). These innovations still focus on the development of media or teaching materials, rather than on the development of comprehensive learning models.

Hybrid learning is developing as an approach that combines face-to-face and online learning to increase the flexibility and effectiveness of the learning process. This approach enables the use of various digital technologies such as learning platforms, videos, discussion forums, and collaborative tools that can support the development of language skills, including reading, writing, and listening (Klimova & Kacetl, 2015). Hybrid learning can also increase student engagement and encourage more active learning activities (Wu & Nian, 2021). The success of this approach depends heavily on appropriate learning design, teacher and student readiness, and the availability of supporting facilities (Chiu & Chou, 2012; Hasnine, Ueda, & Ahmed, 2022).

Despite the increasing adoption of hybrid learning and the recognized importance of local wisdom in education, existing studies rarely develop an integrated learning model that systematically embeds local wisdom into instructional design, learning stages, and problem-solving activities of Indonesian language instruction. In many cases, local wisdom is treated merely as learning content rather than as a core element of the learning system. Moreover, hybrid learning models implemented in practice often lack clear instructional steps for both online and offline learning, resulting in disorganized learning processes that do not fully meet educational standards.

This study was conducted to address this gap by developing the Indonesian Language Learning Model Hybrid Mode (PBIMH), a hybrid learning framework that systematically integrates Acehnese local wisdom into Indonesian language teaching. This model combines the principles of hybrid learning, problem-based learning, and contextual cultural content in a structured learning design supported by a Learning Management System (LMS). Unlike previous studies that focused primarily on teaching materials or digital media, this model places local wisdom as a fundamental pedagogical element embedded throughout the learning objectives, learning stages, activities, and assessments. This study also has several objectives, including: (1) developing a hybrid Indonesian language learning model based on Acehnese local wisdom; (2) testing the content and construct validity of the developed model; and (3) evaluating its practicality in a real classroom context involving Indonesian language teachers. Through these objectives, this study seeks to provide an empirically validated and context-responsive hybrid learning model that supports meaningful language teaching and strengthens the integration of local cultural values in curriculum implementation.

2. Methodology

2.1. Research Design

This study applies Participatory Action Research (PAR) as the main methodological approach, combined with the ADDIE (Analysis, Design, Development, Implementation, Evaluation) instructional design model, to develop a systematic learning model. PAR is used as a research framework that emphasizes the active involvement of stakeholders in problem identification, joint reflection, and continuous improvement of learning practices. Through this approach, teachers, researchers, and experts collaboratively participate in formulating learning needs and evaluating each stage of model development (Somnuk et al., 2023).

The ADDIE model serves as an operational framework that provides a clear structure for the instructional development process. The integration of these two approaches is carried out by placing ADDIE as a systematic work stage within the PAR reflection and action cycle. The model development process thus not only follows structured instructional design steps but also maintains the principles of participation, reflection, and continuous improvement, which are the main characteristics of PAR.

The analysis stage is carried out through implementation via reflective discussions with teachers to identify the needs of Indonesian language learning in the context of hybrid learning that is relevant to local wisdom. The design and development stages focus on designing and compiling a prototype learning model, which is then reviewed with education experts and practitioners. The implementation stage was conducted through limited trials

in partner schools to observe the feasibility of the learning model that had been designed. Next, the evaluation stage was carried out formatively to obtain input regarding the validity, practicality, and feasibility of the developed model. The evaluation process at each stage allowed for gradual refinement of the model, so that the resulting product was more aligned with learning needs in the field (Reid et al., 2022). This study was conducted in the Banda Aceh and Aceh Besar regions, involving Indonesian language teachers from several senior high schools. The schools participating in this study included State Senior High School 1 Banda Aceh, State Senior High School 3 Banda Aceh, State Senior High School 5 Banda Aceh, State Senior High School Darussalam Aceh Besar 1, and State Senior High School Darul Imarah Aceh Besar 1. The participation of several schools with different characteristics provided a more diverse implementation context so that the developed model could be tested in various learning situations.

The final result of this research is the Indonesian Language Learning Model Hybrid Mode (PBIMH), which is designed to improve students' attitudes, knowledge, and skills through participatory and technology-supported learning.

2.2. Participants

The core participants in this PAR study consisted of 28 pre-service Indonesian language teachers enrolled in a professional teacher education program. These participants functioned as co-researchers who actively contributed to needs analysis, model design, implementation, and evaluation. Additionally, three lecturers were involved as academic facilitators, and three research assistant staff provided technical and administrative support throughout the research process.

Participant attendance ranged from 20 to 26 individuals per session, reflecting the flexible and participatory nature of PAR. Demographically, participants included 4 males (14%) and 24 females (86%), aged between 21 and 30 years. The largest age group was 23–24 years (68%), followed by 21–22 years (11%), 25–26 years (11%), 27–28 years (7%), and 29–30 years (4%). All participants (100%) held undergraduate degrees (S1) and were undergoing professional teacher training.

PAR in this study was positioned not as a hierarchical role of educator or supervisor, but as a collaborative approach emphasizing shared ownership of the research process (Smit, Meirink, Berry, & Admiraal, 2020).

2.3. Research Procedure of the PBIMH Model Development

Prior to model development, questionnaires were distributed to teacher participants to examine their perceptions, readiness, and perceived practicality of the proposed hybrid learning innovation. This preliminary assessment was essential for identifying factors influencing participants' acceptance of educational innovations (Nasri, 2018).

The PBIMH model was developed through the ADDIE framework, supported by iterative formative evaluation at each stage. The ADDIE model enables systematic prototype development while incorporating continuous feedback to refine instructional products (Nadiyah & Faaizah, 2015). The development process resulted in four successive prototypes (Prototype 1 to Prototype 4), each revised based on participant input and evaluation outcomes.

Formative evaluation was conducted in a participatory manner throughout all stages, ensuring that revisions were grounded in practical classroom needs and contextual realities. This iterative evaluation approach aligns with product-oriented instructional design research (Yu, Hsueh, Sun, & Liu, 2021).

2.3.1. Analysis Stage

At the analysis stage, the researchers examined the Indonesian Language Curriculum for Grade X senior high school, which has adopted the Merdeka Curriculum. The learning model prototype focused on problem-based learning integrated with Acehese local wisdom, aiming to enhance students' 4C skills (Critical Thinking, Communication, Collaboration, and Creativity) through the topic "*Learning from the Biographies of National Heroes.*" Following curriculum analysis, the researchers identified Phase E learning outcomes for Grade X students as stipulated in the national learning achievement document. This phase analysis was essential to align general competencies, knowledge forms, and learning outcomes with the principles of the Merdeka Curriculum, which differentiates competencies across educational levels.

2.3.2. Design Stage

Based on the analysis results, Prototype 1 of the PBIMH model was designed through collaborative brainstorming sessions involving researchers and teacher participants. The instructional concept integrated hybrid learning, problem-based learning, and Acehese local wisdom as core pedagogical components.

To operationalize the model, additional instructional and technological designs were developed. This process was supported by three students responsible for designing biography-based learning videos and two computer experts who developed the Learning Management System (LMS) and visual interface. The design stage focused on ensuring pedagogical coherence, usability, and alignment with the hybrid learning environment.

Subsequent prototypes (Prototype 2 and Prototype 3) were developed through iterative revisions, incorporating feedback from formative evaluations. Prototype 4 was implemented in a limited trial phase, emphasizing user orientation and effective utilization of the LMS. The final evaluation employed questionnaires to assess the validity and practicality of the PBIMH model.

2.4. Research Instrument

This study utilized two main instruments: an expert validation sheet and a model practicality questionnaire. The expert validation sheet was used to assess the Indonesian Language Learning Model Hybrid Mode (PBIMH) in terms of both content and structure. This instrument contained 20 statements designed to evaluate several important aspects, including the alignment of learning objectives with the applicable curriculum, the integration between components within the learning model, the clarity of learning activity stages, the suitability of evaluation

strategies used, and the use of technology to support the hybrid learning process. Each statement was assessed using a five-level Likert scale, with scores ranging from 1 (strongly disagree) to 5 (strongly agree). The validation process was conducted by three experts with expertise in language education and technology-based learning development. The validators were selected based on relevant academic backgrounds, experience in educational research, and involvement in the development of learning models or tools.

In addition to assessing model validity, this study also examined the practicality of PBIMH through a questionnaire administered to participating teachers after the implementation phase. The practicality instrument consists of 18 items focusing on the model's ease of use, flexibility in its application in classroom learning activities, and its suitability for the needs of Indonesian language learning in schools. Before being used in the data collection process, all instruments were tested for reliability to ensure internal consistency between items. Reliability testing was conducted using a Cronbach's Alpha coefficient, and the analysis results showed an α value of 0.87. This value indicates the instrument has a high level of reliability and is therefore suitable for use as a data collection tool in this study. During the validation process, three experts were asked to provide an assessment of each item and offer input or recommendations for necessary improvements. The scores from each validator were then calculated to obtain an average score for each aspect assessed. The results of this analysis were used as a basis for refining the PBIMH model before its implementation in the trial phase.

2.5. Data Analysis

Data obtained from questionnaires and formative evaluations were analyzed descriptively to identify trends in participant perceptions, model practicality, and implementation feasibility. Qualitative feedback from participants supported iterative revisions and enhanced the contextual relevance of the PBIMH model.

3. Results

Acehnese local wisdom is systematically integrated into the PBIMH model to strengthen the learning structure while enhancing contextual relevance in the learning process. Elements of local wisdom are incorporated into various learning components, such as classroom activities, teaching materials, biographical texts, and audiovisual learning resources. This integration ensures that the cultural context is not merely a supplement to the material but an integral part of each stage of learning.

The integration of Aceh's local wisdom in its implementation is realized through various hybrid learning activities supported by a Learning Management System (LMS). In the early stages of learning, for example, students are introduced to short biographies of Acehnese figures who have made important contributions in the social, cultural, and local leadership fields, namely Laksamana Malahayati, Cut Nyak Dhien, and Ali Hasjmy. The material is presented in the form of digital modules that combine narrative texts, short documentary videos, and reflective questions that can be accessed through the LMS. Through this approach, students not only learn the structure of biographical texts but also understand the character values contained in the lives of these figures.

In synchronous learning sessions in class, teachers facilitate group discussions that encourage students to analyze the values of leadership, exemplary behavior, and struggle reflected in the biographies of these Acehnese figures. This discussion is then followed by a comparative activity, in which students compare local figures with national or international figures. This activity aims to develop critical thinking skills while broadening students' perspectives on various forms of leadership and social contribution.

Students are then given a project assignment to write a short biography of an inspirational figure from their local environment, such as a community leader, teacher, or cultural figure in the surrounding area. This assignment is collected through the LMS and accompanied by peer feedback activities, thereby encouraging collaborative interaction in the learning process. Students not only develop writing skills, but through these activities, they also develop communication, collaboration, and creativity skills.

Teachers involved in implementing the PBIMH model stated that this model provides a high degree of pedagogical flexibility. The PBIMH model is not seen as a rigid learning procedure but rather as an adaptive instructional framework. Teachers can adjust learning activities to classroom conditions, student characteristics, and the availability of learning resources. These findings align with the view that teachers are the main agents in implementing learning models, so the success of a model is greatly influenced by teachers' ability to adapt it contextually (Yu et al., 2021).

The implementation process of the PBIMH model also revealed several challenges that need to be addressed. Some teachers said that integrating local wisdom requires more preparation time, especially in selecting authentic cultural resources and adapting them to a digital learning format. Variations in students' digital literacy levels also affect the smooth running of hybrid learning. Based on this, it can be said that the successful implementation of the PBIMH model depends not only on its pedagogical design but also on technological readiness and professional development support for teachers.

3.1. Validity of the PBIMH Model

The validity of the PBIMH model was evaluated through content validity and construct validity to ensure that each component of the model had a strong conceptual basis, was aligned with the curriculum, and demonstrated pedagogical coherence. The validation process also aimed to assess the extent to which the PBIMH model provided relevant and effective instructional steps in biographical text learning.

The conceptual validity of the model was established through expert assessment and systematic analysis of the model components.

This process provided evidence that the PBIMH model was constructed based on a relevant theoretical framework and appropriate learning design principles (O'Neill, Lauridsen, Østengaard, & Qvortrup, 2023). The validity assessment results are presented in Table 1.

Table 1. The validity of the PBIMH model.

Validity Criteria	1	2	3	4	5	Mean Score	SD
The learning objectives for biographical texts in the PBIMH model are in line with the Independent Learning Curriculum.	0	0	0	14	14	4.50	0.5
The biographical text material based on Acehnese local wisdom presented in the PBIMH model is very representative	0	0	1	12	15	4.50	0.57
The methods in the PBIMH model support the student learning process (Flexible)	0	0	0	15	13	4.46	0.5
Assessment of learning biographical texts using the PBIMH model is appropriate	0	0	1	11	16	4.54	0.57
All components in the PBIMH model are interrelated in learning	0	0	0	12	16	4.57	0.49
LMS developed in the PBIMH model provides convenience for students	0	0	1	11	16	4.54	0.57
Learning instructions in the PBIMH model are directed at achieving competency	0	0	0	14	14	4.50	0.5
Student activities in the PBIMH model provide meaningful experiences	0	0	1	13	14	4.46	0.57
Cumulative	0	0	4	102	118	4.51	0.53

Note: 1 = Very incorrect, 2 = Incorrect, 3 = Unknown, 4 = True, 5 = Very true.

The validation results show that the PBIMH model obtained high scores on all assessed indicators. The average score ranged from 4.46 to 4.57, with an overall average of 4.51 and a relatively low standard deviation (SD = 0.53). These results indicate a strong level of agreement among validators regarding the conceptual quality and structural coherence of the PBIMH model.

The indicator with the highest score was the interrelationship between model components ($M = 4.57$), which shows that learning objectives, instructional activities, teaching materials, and assessment strategies are considered to have consistent and mutually supportive relationships. Additionally, the suitability of the assessment system in biographical text learning also received a high score ($M = 4.54$), indicating that the PBIMH model effectively integrates formative and reflective assessment processes.

Another aspect that received attention from the validators was the alignment of learning objectives with the principles of the Merdeka Curriculum ($M = 4.50$). This alignment shows that the PBIMH model not only supports the achievement of Indonesian language subject competencies but also aligns with broader educational objectives, such as developing independent learning, critical thinking skills, and contextual learning.

The LMS component, which is part of the PBIMH model, also received a high validity rating ($M = 4.54$). This shows that the integration of technology in the learning model can support the effective implementation of hybrid learning. However, some validators emphasised that the effectiveness of LMS use is greatly influenced by the level of teacher readiness in utilising learning technology. Without adequate training support, the potential use of technology in this model may not be optimally utilised.

Based on these results, it can be concluded that the PBIMH model has met the criteria for content and construct validity. Nevertheless, the successful implementation of the model in a broader educational context still requires technological infrastructure support and improved digital competence for teachers.

3.2. Practicality of the PBIMH Model

The practicality of the PBIMH model was evaluated through its implementation by Indonesian language teachers in several senior high schools in Banda Aceh and Aceh Besar. Teachers' perceptions were collected to assess the ease of use, flexibility, and feasibility of applying the model in real learning situations in the classroom. Every teacher viewed the PBIMH model as a practical learning model that could be applied in learning activities. However, the implementation of this model required careful preparation, especially in the development of learning tools and the use of digital learning media.

None of the teachers viewed the PBIMH model as a rigid learning procedure but rather as a flexible pedagogical framework. This model can be used as the main approach in learning or as an alternative to enrich previously used teaching strategies. These results align with the view that learning models should function as guiding principles that can be adapted to contextual learning needs rather than as fixed procedures (Ozdilek & Robeck, 2009). Teachers' perceptions regarding the suitability of the PBL model are summarized in Table 2.

Table 2. The practicality of the PBIMH model.

Practicality Criteria	1	2	3	4	5	Mean Score	SD
The PBIMH model is easy to use in the learning process	0	0	3	10	15	4.43	0.68
The learning steps in the PBIMH model can be followed well	0	0	1	11	16	4.54	0.57
Learning steps in the PBIMH model can be carefully wrapped	0	0	0	14	14	4.50	0.50
The features of the applications available in the PBIMH model can be set	0	0	1	12	15	4.50	0.57
Instructions in the PBIMH model can be executed correctly	0	0	2	11	15	4.46	0.63
Device availability in the PBIMH Model can be changed according to teacher needs	0	0	2	10	16	4.50	0.63
The Aceh locally meaningful PBIMH model can be practically used to increase 4cs	0	0	1	11	16	4.54	0.57
The PBIMH model can be used to teach biographical text material	0	0	0	12	16	4.57	0.49
Cumulative	0	0	10	91	123	4.51	0.58

Based on the data presented in Table 2, all practicality indicators obtained high average scores, ranging from 4.43 to 4.57. The overall average score was 4.51 with a standard deviation of 0.58, indicating strong agreement among teachers regarding the practicality of the PBIMH model. The indicator with the highest score was the suitability of the PBIMH model for teaching biographical texts ($M = 4.57$). These results indicate that teachers consider the model to be highly relevant to the objectives of Indonesian language learning. Additionally, each

teacher stated that the integration of Acehnese local wisdom in the PBIMH model supported the development of students' 21st-century skills, particularly the 4Cs skills, which include critical thinking, communication, collaboration, and creativity ($M = 4.54$).

In terms of implementation, each teacher stated that the learning steps in the PBIMH model were relatively easy to understand and apply ($M = 4.54$). Additionally, the digital features in the LMS were considered flexible enough to be adapted to classroom learning needs ($M = 4.50$). The relatively small standard deviation values for each indicator show that teachers' perceptions of the practicality of this model are relatively consistent. Each teacher also identified several potential obstacles in implementing the PBIMH model. Hybrid learning requires stable internet connectivity and the availability of adequate digital devices for students. Furthermore, each teacher emphasized the importance of continuous training to improve teachers' ability to utilize learning technology and effectively integrate local wisdom-based material.

The results of this study indicate that the PBIMH model has a high level of practicality for application in classroom learning. The flexibility of the model, its suitability for learning objectives, and the integration of contextual cultural content make this model relevant for use in a hybrid learning environment.

4. Discussion

4.1. Design of Curriculum Representations

The PBIMH model was developed through a systematic examination of curriculum theory and its practical application in Indonesian language instruction. The model aligns with the Merdeka Curriculum, which emphasizes learning flexibility, contextual relevance, and meaningful learning experiences. This alignment is essential, as the Merdeka Curriculum requires teachers to adapt instructional design to students' learning conditions while strengthening higher-order thinking and contextual understanding.

Describe the curriculum as a structured sequence of learning activities that functions as a strategic framework for instructional implementation. In the PBIMH model, this sequence is operationalized through a hybrid learning environment supported by a digital learning platform, enabling the expansion of learning resources beyond traditional classroom boundaries (Peng, Li, Wang, & Ho, 2023). This finding is consistent with Kao, Yuan, and Wang (2023), who emphasize the role of digital platforms in supporting curriculum implementation and knowledge construction. Furthermore, the PBIMH model integrates pedagogical content knowledge (PCK), ensuring that instructional decisions are not only technologically driven but also pedagogically meaningful (Grgic, 2023).

The design of the PBIMH model is grounded in key elements of learning model development, namely syntax, social system, principles of reaction, support system, and instructional and nurturant effects (Behar-Horenstein & Seabert, 2005). These elements are systematically embedded within the PBIMH framework, particularly through the integration of Aceh's local wisdom as learning content and learning context. The inclusion of local wisdom enriches theoretical perspectives and strengthens students' competencies by linking academic content with sociocultural realities (Ningrum, 2016). In the context of hybrid classrooms, the PBIMH model emphasizes constructivist learning principles, adaptive learning strategies, and the purposeful use of learning technologies. This supports previous findings that hybrid learning environments are most effective when instructional design, technology, and pedagogy are cohesively integrated (Hasnine et al., 2022). Rather than treating hybrid learning as a mere combination of online and offline modes, the PBIMH model positions hybrid learning as a coherent instructional system that facilitates interaction, reflection, and problem-solving.

The curriculum representation within the PBIMH model follows the framework proposed by Van den Akker et al. (2009), which distinguishes curriculum levels and representations, including intended, implemented, and attained curricula. In the PBIMH model, the intended curriculum is reflected in the philosophical foundation of integrating local wisdom and problem-based learning within the Merdeka Curriculum. The formal curriculum is manifested in written learning tools, lesson plans, and digital materials embedded in the LMS. The implemented curriculum is represented through teachers' perceptions and classroom practices during hybrid instruction, while the attained curriculum is reflected in students' learning experiences and knowledge acquisition.

Table 3. Design curriculum.

Levels		Representations
Intended	Ideal	Curriculum as intended in the rationale or basic philosophy underlying a curriculum
	Formal/Written	Curriculum written as formal documents and/or materials
Implemented	Perceived	Curriculum as perceived by teachers
	Operational	Curriculum operated in actual teaching and learning
Attained	Experiential	Curriculum as experienced by learners
	Learned	Curriculum as learned by students

Through this alignment of curriculum representations in Table 3, the PBIMH model demonstrates coherence between curriculum intentions, instructional practices, and learning outcomes. This coherence is critical in ensuring that curriculum design does not remain at the conceptual level but is effectively translated into meaningful learning experiences for students. Therefore, the PBIMH model contributes not only as a practical instructional framework but also as a curriculum-responsive hybrid learning model that bridges theory, practice, and local cultural contexts.

4.2. The Quality of the PBIMH Model Product

The quality of the PBIMH model product was evaluated using a set of criteria that reflect different levels of curriculum representation, as proposed by Van den Akker et al. (2009). This framework was employed to ensure that the PBIMH model was examined comprehensively, not only in terms of its conceptual soundness but also its usability and learning impact. The quality criteria were classified into three curriculum levels: intended, implemented, and attained, as presented in Table 4.

Table 4. Quality of the PBIMH model product.

Levels		Quality Criteria		
Intended	Ideal	Validity	Does the PBIMH model underlie a rational curriculum?	
	Formal/Written		Does the PBIMH model product reflect recent issues or new knowledge? Does the PBIMH model product have a basic component in the curriculum? Do the PBIMH model products have a relationship with each other?	
Implemented	Perceived		Practicality	Is the PBIMH model product understood by the teacher?
	Operational			Can PBIMH model products be used in learning?
Attained	Experiential	Effectiveness	Can the effectiveness of the PBIMH product model be used in learning?	
	Learned		Is the effectiveness of the PBIMH model product when used to achieve learning outcomes?	

Table 4 serves as a reference for determining the quality of the PBIMH model by linking curriculum levels with corresponding quality criteria. At the intended level, the quality of the model is examined through validity, which is divided into the *ideal* and *formal/written* categories. This level evaluates whether the PBIMH model is grounded in a rational curriculum framework, reflects contemporary educational issues and new knowledge, contains essential curriculum components, and demonstrates coherence among its elements. The high validity results obtained in this study indicate that the PBIMH model is theoretically sound and well aligned with curriculum principles.

At the implemented level, the quality of the PBIMH model is assessed through practicality, encompassing the *perceived* and *operational* categories. This level focuses on whether the PBIMH model is understandable to teachers and feasible for classroom implementation. The findings show that teachers were able to comprehend the structure and instructional steps of the PBIMH model and apply it effectively in hybrid learning contexts. This suggests that the model is not only conceptually robust but also practically usable in real teaching situations.

The attained level evaluates the quality of the PBIMH model in terms of effectiveness, categorized into *experiential* and *learned* dimensions. This level examines whether the PBIMH model contributes meaningfully to students' learning experiences and supports the achievement of learning outcomes. Although this study primarily focused on establishing validity and practicality, the experiential evidence indicates that the PBIMH model facilitates meaningful learning activities and supports students' engagement with biographical texts through the integration of Aceh's local wisdom.

Overall, the alignment between the intended, implemented, and attained curriculum levels demonstrates that the PBIMH model product meets the essential criteria of a high-quality instructional model. The integration of validity, practicality, and effectiveness as quality indicators confirms that the PBIMH model is not only well-designed but also feasible and pedagogically meaningful for Indonesian language instruction in hybrid learning environments.

4.3. Integrating Aceh's Local Wisdom into the PBIMH Model

Aceh's local wisdom plays a central role in strengthening the conceptual and pedagogical foundation of the PBIMH model. Previous studies have demonstrated the integration of local wisdom into Indonesian language learning; however, such integration has often been partial and fragmented, focusing mainly on specific components such as learning texts, character education, or instructional approaches (Aziz & Zakir, 2022; Musaddat, Intiana, Suyanu, Atmaja, & Hidayat, 2022; Syafani & Tressyalina, 2023; Utami, Widayati, & Tobing, 2022). In these studies, local wisdom tends to function as supplementary content rather than as an integral element of the learning system. In contrast, the PBIMH model integrates Aceh's local wisdom systematically and comprehensively across all stages of learning. Local wisdom is embedded not only in learning materials but also in learning activities, problem contexts, instructional strategies, and assessment processes. This systemic integration ensures that learning content remains closely connected to students' sociocultural environments, thereby increasing relevance, engagement, and meaningful learning experiences.

The primary focus of integrating Aceh's local wisdom into the PBIMH model is to deepen students' conceptual understanding and foster the development of a culturally grounded mindset. Learning activities are designed to encourage students to explore, analyze, and reflect on values, traditions, and social practices present in their immediate environment. This approach aligns with previous findings that local wisdom-based learning can effectively support character formation and moral development (Seno, Narimo, Fuadi, Minsih, & Widyasari, 2022; Usman & Ibrahim, 2023). Furthermore, the integration of local wisdom within the PBIMH model contributes to the construction of new knowledge that is relevant to students' real-life needs. As argued by Pornpimon, Wallapha, and Prayuth (2014), learning models grounded in local wisdom enable students to connect academic knowledge with life skills and social values. Through contextual activities such as observation, discussion, and problem-solving, students are exposed to meaningful life values that support their personal and social development.

Strengthening Aceh's local wisdom within the PBIMH model is also directed toward the development of students' attitudes. Local wisdom serves as a foundational element in education for shaping attitudes and national character (Mustika, 2018). Awareness of local wisdom systems helps learners understand cultural realities, avoid misconceptions, and develop cultural sensitivity (Stirling et al., 2023). Therefore, learning support grounded in Aceh's cultural context enhances students' cultural literacy and fosters attitudes guided by local values, norms, and ethical principles. Overall, the integration of Aceh's local wisdom in the PBIMH model moves beyond content enrichment and functions as a core pedagogical strategy. By embedding cultural values within a hybrid and problem-based learning framework, the PBIMH model provides a meaningful and context-responsive approach to Indonesian language instruction that supports cognitive, affective, and social learning outcomes.

4.4. Developing the PBIMH Model

The development of the PBIMH model was carried out systematically by following the predefined design framework and emphasizing continuous validation and refinement. The prototype development process focused on content and construct validation based on curriculum levels, learning contexts, and curriculum representations, referring to the intended, implemented, and attained levels. The PBIMH model product, realized as a web-based application, was refined through iterative feedback from expert validators and users.

4.4.1. Validation Stage

The validation process aimed to ensure that the PBIMH model met both content validity and construct validity criteria. Validation was conducted by expert validators who evaluated the model according to the established quality indicators. Feedback from validators was used to revise and improve the PBIMH model before field implementation.

The results of the validation process indicate that the PBIMH model achieved high levels of feasibility. In terms of content validation, Validator I awarded an average score of 92.5, Validator II awarded 87.5, resulting in an overall average score of 87.5. For construct validation, Validator I scored 95, Validator II scored 87.5, and Validator III scored 90. Based on the validation criteria, both content and construct aspects were categorized as “very feasible.” These findings confirm that the PBIMH model is theoretically sound, well-structured, and appropriate for instructional use. Validation results of the PBIMH model are shown in Figure 1.

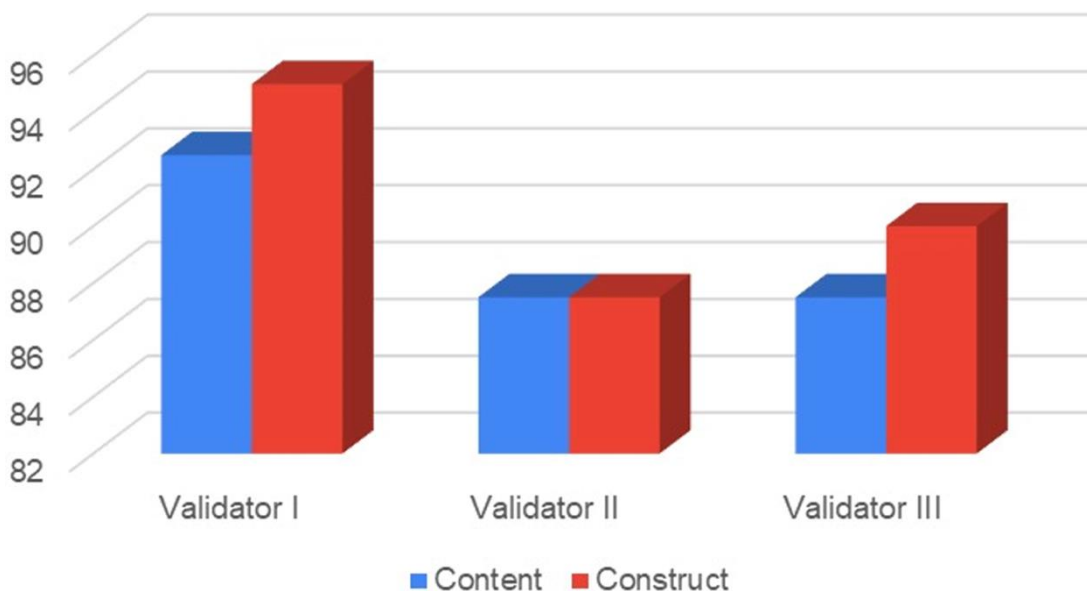


Figure 1. Validation of the PBIMH Model.

4.4.2. Implementation Stage

Following validation, Prototype 4 of the PBIMH model was implemented to examine its feasibility in real instructional settings. Teachers were provided with individual PBIMH accounts to test all instructional components, including learning sequences, digital features, and learning content embedded in the PBIMH application. This implementation stage involved 28 Indonesian language teachers participating in a professional teacher education program.

The implementation process focused on teachers’ experiences in operating the model, navigating the LMS, and applying hybrid learning activities in teaching biographical texts. This stage allowed teachers to directly engage with the PBIMH model and provided essential insights into its usability and instructional flow.

4.4.3. Evaluation Stage

The final stage of development involved evaluating the PBIMH model using questionnaires to collect feedback from teachers and experts. This evaluation served as a formative assessment mechanism to support further refinement of the model, as suggested by Yu et al. (2021). Rather than treating evaluation as a final step, formative evaluation was conducted collaboratively and iteratively throughout the development process, resembling a product-oriented design cycle. The validity of the PBIMH model was further examined through self-evaluation by the researcher, focusing on the syntactical structure of the learning model and the functionality of the LMS. Additionally, teachers and lecturers were invited to provide qualitative feedback on the model’s clarity, coherence, and instructional relevance. Practicality was assessed through teachers’ experiences in using the PBIMH model during implementation.

To strengthen data credibility, triangulation was applied by involving multiple evaluators and data sources. Three lecturers specializing in learning models and Indonesian language education from Universitas Negeri Malang, Universitas Islam Negeri Ar-Raniry, and Universitas Al-Muslim contributed expert judgments to the evaluation process. The development process of the PBIMH model is shown in Figure 2.

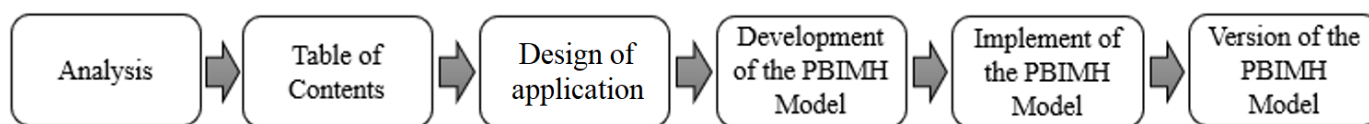


Figure 2. The development process of the PBIMH model.

4.4.4. Collaborative Development through the ADDIE Framework

The PBIMH model was developed using the ADDIE framework (Analysis, Design, Development, Implementation, and Evaluation), which emphasizes systematic instructional design and continuous improvement. Teachers were actively involved as collaborators throughout the development process to ensure alignment between the model's design and classroom realities. This collaborative approach allowed the PBIMH model to be refined based on users' experiences and instructional needs.

The use of the ADDIE model is supported by previous studies demonstrating its effectiveness in developing innovative learning solutions, including augmented reality applications (Ferdiman, Al Akbar, Faturrahman, & Maulana, 2023; Rahman, Faisal, & Tho, 2023), clinical communication models (Choi, Lee, & Gwon, 2021), and interactive digital learning environments (Nurhasanah, Pinandoyo, Alamsyah, Prasetyo, & Zukri, 2023). These studies indicate that ADDIE facilitates clearer instructional structures, improved learning engagement, and enhanced learner outcomes. In line with these findings, the PBIMH model was developed to support Indonesian language teachers in improving students' learning outcomes in biographical text instruction. By integrating local wisdom, hybrid learning, and problem-based learning within the ADDIE framework, the PBIMH model provides teachers with a structured yet flexible instructional approach. This development responds to teachers' needs for innovative learning models that enhance readiness, engagement, and achievement in Indonesian language learning.

The use of the PBIMH model as learning content facilitates students' exploration of biographical texts through structured technological support. This finding aligns with Sidi, Shamir-Inbal, and Eshet-Alkalai (2023), who emphasize that effective technology integration requires teachers to possess adequate control and pedagogical competence in its use. In this study, the PBIMH model demonstrates added value by embedding Acehese local wisdom into biographical text materials, making the content highly representative and contextually relevant for students in Aceh. Learning materials grounded in local contexts have been shown to enhance comprehension and meaningful learning (Sakti, Endraswara, & Rohman, 2024), and the PBIMH model operationalizes this principle through a systematic learning design rather than merely presenting cultural content.

The availability of a Learning Management System (LMS) within the PBIMH model further supports diverse student learning modalities. The LMS enables students to access learning materials and assignments flexibly, whether in face-to-face, online, or distance learning settings. This flexibility contributes to improved understanding of learning materials and positively influences student attitudes toward learning. Previous studies have indicated that web-based learning models, including LMS-supported instruction, significantly affect learners' attitudes (Al-Mamary, 2022). However, as highlighted by Toring et al. (2023), evaluating student satisfaction remains essential to fully capture the perceived benefits of such models. Therefore, the PBIMH model not only addresses instructional delivery but also opens opportunities for further investigation into students' affective responses.

The practicality of the PBIMH model is evident from participant responses, indicating that teachers perceive the model as easy to implement and adaptable to various instructional contexts. The model provides practical facilities for organizing learning activities while accommodating students' needs across face-to-face, online, and distance learning environments. This finding supports (Frederick et al., 2023), who reported that students prefer blended learning approaches because they enhance motivation and engagement. The PBIMH model is particularly relevant in situations where learning continuity is required, such as during crisis conditions like the COVID-19 pandemic, as it allows instruction to proceed without being constrained by physical space or location. Moreover, the model supports the development of student independence in learning. Nevertheless, further research is needed to examine how different learning experiences and school contexts, especially in more traditional educational settings, affect the effectiveness of the model (Calderón, Masterson, & Boynuegri, 2024).

Through its specially designed web application, the PBIMH model, based on Acehese local wisdom, also demonstrates potential in fostering 21st-century skills, particularly the 4Cs: Communication, Collaboration, Critical Thinking, and Creativity. The features embedded in the application assist teachers not only in delivering instruction but also in managing and monitoring the learning process. However, the effectiveness of developing the 4Cs through this model depends on several factors, including student profiles, self-regulation abilities, concept-mapping activities, and access to information (Barta, Fodor, Tamas, & Szamoskozi, 2022; Kim, Park, & Jang, 2019; Razanakolona, Razafimandimby, Andriamandanomenajanahry, & Rhazali, 2020; Sergeeva, 2014). These findings indicate that the PBIMH model has strong potential to support the development of 21st-century competencies while remaining flexible for further enhancement. Additionally, the LMS enables systematic documentation of learning activities, allowing teachers to continuously enrich materials and introduce more complex biographical texts in Indonesian language learning.

5. Conclusion

Based on the findings and discussion, this study concludes that the PBIMH model represents a validated and practical hybrid learning model for Indonesian language instruction, particularly in teaching biographical texts through the integration of problem-based learning and Acehese local wisdom. The development of the PBIMH model followed the ADDIE framework, ensuring a systematic process that emphasizes instructional validity, practicality, and contextual relevance. The model was collaboratively developed by involving teachers as users, with reference to curriculum levels, contextual alignment, and curriculum representation in the implementation of Indonesian language learning.

The implementation results indicate several important outcomes. First, the PBIMH model enhances teachers' pedagogical knowledge and technological competence in conducting hybrid learning. Second, the learning objectives embedded in the model are aligned with students' learning needs, particularly in understanding biographical texts grounded in Acehese local wisdom. Third, the learning syntax, instructional features, and LMS-based content are structured in a clear and coherent manner, allowing teachers to follow and implement the learning steps effectively. Fourth, the PBIMH model enables flexible learning implementation, allowing teachers to conduct instruction without full face-to-face interaction by utilizing digital features for content delivery, learning activities, and assessment. Despite its strengths, the implementation of the PBIMH model also reveals several practical challenges that require further reinforcement. The intensive use of technological tools demands additional

preparation time and digital readiness from teachers. Internet accessibility and data availability among students remain critical factors influencing learning continuity. Furthermore, institutional support is essential to ensure the sustainability of hybrid learning practices. In non-face-to-face learning contexts, teachers must carefully schedule synchronous sessions to accommodate stable internet connectivity.

The novelty of this study lies in the systematic integration of Acehese local wisdom as a core pedagogical foundation within a hybrid problem-based learning model supported by an LMS. Unlike previous studies that incorporate local wisdom merely at the content, character education, or contextual enrichment level, the PBIMH model embeds local wisdom across instructional design, learning activities, assessment strategies, and technological implementation. Additionally, this study contributes methodologically by evaluating the PBIMH model using a comprehensive quality framework encompassing validity, practicality, and effectiveness across intended, implemented, and attained curriculum levels.

6. Conflict of Interest

Based on the conditions of Indonesian language teaching in Aceh and a review of previous studies, several main problems can be identified as follows: 1) Indonesian language learning has not optimally integrated Acehese local wisdom as a core component of the learning system. Local wisdom is generally treated as additional content rather than being integrated into the learning design, learning stages, and learning activities. 2) Existing Indonesian language learning practices, particularly in teaching biographical texts, are often irrelevant to the context of students' real-life experiences. Learning materials and examples are often disconnected from the students' socio-cultural environment, resulting in low engagement, limited understanding, and suboptimal learning outcomes. 3) Hybrid learning has been widely implemented, but many teachers still find it difficult to design structured hybrid teaching with clear and coherent learning steps for both online and offline modes. As a result, hybrid learning is often implemented inconsistently and fails to fully support effective learning processes. 4) Previous studies have mostly focused on the development of teaching materials or digital media rather than on comprehensive learning models that integrate local wisdom, problem-based learning, and hybrid learning systems. This indicates a lack of integrated and systematically designed hybrid learning models for Indonesian language teaching that have been empirically evaluated in terms of their validity and practicality.

These issues highlight the need to develop a hybrid Indonesian language learning model that systematically integrates Acehese local wisdom into learning design and activities, supported by formative evaluation to ensure its validity and practicality.

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