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Local-wisdom-based indigenous language teaching materials through contextual learning: the Kaili language and literature case

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ABSTRACT

This study developed and validated local-wisdom-based teaching materials for the Kaili Language and Literature course through contextual learning using the Four-D model (define, design, develop, and disseminate). The study was conducted at the Indonesian Language and Literature Education Study Program, Universitas Alkhairaat Palu, during the even semester of the 2025/2026 academic year. At the define stage, classroom observation and interviews with 31 students, the course lecturer, and the Head of the Study Program were used to identify learning conditions and material needs. Qualitative data were analyzed through data reduction, data display, and conclusion drawing/verification with cross-source checking. The developed product integrated Kaili language structure, oral and written literature, local-wisdom values, contextual learning activities, and course outcomes; selected assignments also encouraged students to document and digitize local oral-literature resources as an application of preservation. Three domain experts evaluated media, language, and content using five-point Likert instruments. Validation yielded 96% for media, 98% for language, and 97% for content. Limited dissemination through an eight-member academic Focus Group Discussion produced ratings from 70% to 92%, with an overall mean of 86.75%, and generated revisions concerning curriculum alignment, terminology, visual design, and publication standards. The findings establish the feasibility of an integrated local-wisdom-based teaching material through contextual learning; they do not establish learning effectiveness and therefore provide a basis for subsequent classroom trials.

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Introduction

Language education for regional and local-language communities is not only a matter of linguistic proficiency; it is also closely tied to identity, cultural continuity, and the transmission of community knowledge. Higher education can play a strategic role when regional-language learning connects linguistic knowledge with cultural experience and identity (Kim, 2020; Nugraheni & Hasan, 2026). Research on indigenous knowledge integration similarly emphasizes the educational value of culturally grounded knowledge and practices (da Silva et al., 2024). Systematically organized teaching materials can help structure learning experiences and guide learning objectives; the original literature base for this study also situates such organization within broader discussions

of educational resources, lesson design, and active learning environments (W. D. Huang et al., 2024; Moundridou et al., 2024; Veldkamp et al., 2020).

This issue is especially relevant in Indonesia, where linguistic diversity requires educational practice to accommodate national curriculum expectations while remaining responsive to local languages and cultures. Outcomes-based developments in Indonesian higher education emphasize alignment among learning outcomes, content, teaching activities, and assessment (Mufanti et al., 2024). In the present context, the challenge is therefore not merely to add cultural examples, but to organize language, literature, local knowledge, learning activities, and assessment into a coherent pedagogical resource. Broader studies of learning resources and learning environments likewise show the importance of responding to learner needs and the conditions in which learning occurs (Maatuk et al., 2022; Regmi & Jones, 2020; Valtonen et al., 2021).

Kaili is a regional language associated with communities in Central Sulawesi, particularly Palu and surrounding areas. Kaili language and literature encode local knowledge and values such as togetherness, responsibility, politeness, hard work, respect for others, and relationships with the environment. Previous work on regional-language environments and Kaili oral traditions underlines the educational relevance of maintaining links among language, culture, and intergenerational knowledge (Nugraheni & Hasan, 2026; Rustina et al., 2026). The dissertation data underlying this article also indicate concern about reduced everyday use of Kaili among younger speakers; however, the present study did not measure community-wide language-use rates or proficiency prevalence. Accordingly, the intervention is framed as a needs-based curriculum-development study rather than as a quantified estimate of language shift.

The define-stage evidence showed a concrete curricular gap in the Kaili Language and Literature Course at the Indonesian Language and Literature Education Study Program, Faculty of Teacher Training and Education, Universitas Alkhairaat Palu. Existing learning resources consisted primarily of the Semester Learning Plan, scientific articles, a Kaili dictionary, and PowerPoint presentations used separately rather than as a standardized teaching material. Interviews with 31 students, the course lecturer, and the Head of the Study Program indicated difficulty with Kaili vocabulary, limited use of concrete cultural examples, a predominantly lecturer-centered learning process, and a need for more active and culturally grounded learning experiences. Students expected authentic examples, cultural observation, discussion, and tasks connected with the Kaili social environment. These needs are consistent with the original study framework, which emphasized the value of learner-responsive resources and learning environments (Maatuk et al., 2022; Valtonen et al., 2021).

The integration of local wisdom is central to the proposed solution because culture-based teaching materials can use texts, stories, expressions, and cultural practices as authentic learning resources. Such integration allows language to be approached not only as a linguistic system but also as a lived cultural practice (da Silva et al., 2024; Kim, 2020; Rustina et al., 2026). The original literature base also positioned personalization and culturally situated experience as relevant considerations when designing learning resources (Bhutoria, 2022). In this study, local wisdom therefore functions as content to be analyzed, a context for interpreting language and literature, and a source of learning activities rather than as a decorative addition.

The contextual approach was selected so that Kaili language and literature would not be learned as concepts detached from students' lives. Contextual learning in this study connects academic material with real-world situations, experience, interaction, and application. In practice, phonology, morphology, and syntax are linked to language data used in the community; oral and written literature are examined as cultural resources; and local values are interpreted in relation to contemporary life. This orientation is consistent with the study's original use of literature emphasizing situated, experience-connected learning and the relationship between learning and real-life contexts (Dziubaniuk et al., 2023; Irjayanti & Lord, 2024).

The novelty of this study therefore lies in developing a standardized teaching material that integrates Kaili language and literature, local wisdom, and contextual learning within one course-level pedagogical structure. Rather than treating digitization as a separate innovation, the product includes it only as one application task in which students can document or digitize local oral-literature resources after engaging with their linguistic and cultural content. The primary contribution is the integration of content, context, learning activities, and course outcomes in a form designed for higher education. This direction is compatible with broader concerns about curriculum responsiveness and context-sensitive higher-education design in the original literature base (Agbaje, 2023; Lohan & Dafouz, 2024).

Accordingly, this study aimed to: (1) describe the current condition and needs associated with teaching materials in the Kaili Language and Literature Course; (2) design local-wisdom-based teaching materials through contextual learning and align them with course outcomes; (3) develop and establish the feasibility of the product through expert validation and revision; and (4) evaluate the product through limited academic dissemination. The research questions were: (1) What is the current condition of teaching materials used in the

Kaili Language and Literature Course? (2) How can local wisdom and contextual learning be integrated into the design of Kaili Language and Literature teaching materials? (3) What is the feasibility of the developed materials based on media, language, and content expert validation? and (4) What evaluations and revision priorities emerge from limited dissemination through an academic FGD?

Method

The study was conducted at the Indonesian Language and Literature Education Study Program, Faculty of Teacher Training and Education, Universitas Alkhairaat Palu, during the even semester of the 2025/2026 academic year over a three-month research period. It used Research and Development (R&D) with the Four-D model: define, design, develop, and disseminate. The design combined descriptive qualitative analysis for needs, process, and feedback data with descriptive quantitative scoring for product feasibility, an approach consistent with the original manuscript's use of qualitative and quantitative evaluation in product development (Alfian et al., 2024). The study did not test causal learning effects; therefore, no experimental comparison, power analysis, or inferential test was used.

At the define stage, the study drew on classroom observation and interviews. Thirty-one students who had experience with the Kaili Language and Literature Course were interviewed to identify learning difficulties, experiences with existing resources, and expectations for future materials. Two institutional informants were also interviewed: the course lecturer and the Head of the Indonesian Language and Literature Education Study Program. The dissertation further records observation of students currently taking the course to document the learning process and materials in use. Student interviews contained six guiding questions, the lecturer interview six questions, and the head-of-program interview ten questions. Participant selection was role- and experience-based; the source dissertation does not report a formal probabilistic sampling procedure, so no statistical representativeness is claimed.

The Four-D procedures were operationalized as follows. Define included analysis of existing resources, student and lecturer needs, curriculum documents, and the Semester Learning Plan. Design translated those findings into product structure, content organization, instructions, activities, assignments, and alignment with course learning outcomes. Develop consisted of preparing the teaching material, expert validation, and revision. Three expert validators assessed distinct domains: media, language, and content. The validation instruments contained 15 media indicators, 10 language indicators, and 29 content indicators, all scored on a five-point Likert scale. The source dissertation identifies the validators by domain and academic title but does not report a formal selection threshold such as minimum years of professional experience; no such criterion is therefore claimed here. The original manuscript positioned this expert-validation stage alongside literature on instrument and scale validation (Dogruel et al., 2022; Yu et al., 2022). Disseminate was limited to an academic Focus Group Discussion involving the supervisor, two co-supervisors, the three validators, the course lecturer, and the Head of the Study Program; limited dissemination and stakeholder feedback were also situated in the original framework through (Hu et al., 2024; Montgomery et al., 2022).

Qualitative observation, interview, documentation, and FGD data were analyzed using the interactive procedures documented in the dissertation: data reduction, data display, and conclusion drawing/verification. Findings were cross-checked across students, the lecturer, the Head of the Study Program, observations, documents, and FGD feedback. The FGD was used both to obtain qualitative comments and to collect evaluation questionnaires, consistent with the manuscript's methodological reference to FGD practice (Scheelbeek et al., 2020). The dissertation documents a 16-item general FGD evaluation form, an 8-item language-focused evaluation form, and a 5-item Head-of-Study-Program response form. Quantitative feasibility was calculated as P = obtained score / criterion maximum score × 100%. The interpretation was: ≤20% = very infeasible, 21%-40% = infeasible, 41%-60% = moderately feasible, 61%-80% = feasible, and 81%-100% = highly feasible. The product was considered to meet the requirement if it reached at least the feasible category. Because the three expert validators used different domain-specific instruments rather than rating the same items, an inter-rater agreement coefficient was not calculated. The dissertation also does not document a formal saturation rule or independent multi-coder procedure, so neither is claimed in this article.

Results and Discussions

Results

The define stage identified a consistent need for a more coherent learning resource. Existing teaching relied on the Semester Learning Plan, a Kaili dictionary, research articles, and PowerPoint presentations used separately. Students reported difficulty with vocabulary and a need for more concrete, experience-based examples, while

the lecturer and Head of the Study Program identified the absence of a standardized teaching material aligned with the curriculum. The original manuscript related these findings to literature on real-world learning, learning outcomes, and curricular coherence (Mebert, Barnes, Dalley, Gawarecki, Ghazi-Nezami, et al., 2020; O'Dowd, 2021; Roehrig et al., 2021).

Table 1 <Summary of Needs Identified at the Define Stage>

Source/Aspect	Main finding	Design implication
Learning resources	The Semester Learning Plan, scientific articles, dictionary, and PowerPoint materials had not been integrated into standardized teaching materials.	A structured teaching material was needed as a consistent learning guide.
Students	Interviews with 31 students indicated difficulty with Kaili vocabulary, limited contextual examples, and a need for more active and culturally grounded learning experiences.	Provide contextual examples, culturally grounded tasks, discussion, and experience-based activities.
Lecturer and Head of Study Program	The course lecturer and Head of Study Program reported a need for a standardized resource aligned with the curriculum/RPS and capable of strengthening local wisdom.	Align structure, content, activities, and assessment with course learning outcomes and program needs.
Local wisdom and CTL	Local values and contextual learning had been included only partially and were not organized as a coherent pedagogical sequence.	Make cultural knowledge, authentic language/literature data, learner context, and contextual tasks explicit components of the material; preservation activities may be included as applications.

The convergence of student, lecturer, and program-level evidence justified a teaching-material intervention because the identified problem concerned fragmentation of content and weak alignment between resources, learning activities, and course outcomes rather than an absolute absence of Kaili information. The original manuscript used broader work on educational organization and validity to reinforce the need to convert scattered resources into a structured learning experience (Kurdi et al., 2020; van Atteveldt et al., 2021).

At the design stage, the teaching materials were developed from the needs analysis and curriculum review. The product included a front and inner cover, foreword, table of contents, lists of tables and figures, instructions for use, the Semester Learning Plan, teaching-material content, exercises and assignments, references, glossary, author biography, and back cover. The structure was designed to make the product function both as a learning resource and as a guide linking course outcomes with learning activities, consistent with the original manuscript's reference to organized educational resources (R. Huang et al., 2020).

The content covered basic concepts of Kaili language and literature, phonology, morphology, syntax, oral literature, written literature, local-wisdom values, and the relevance of local values to contemporary life. Cultural and literary content included forms such as Mompaova, Rego, Tamabunto, Teka-Teki Jalili, Pompaura, and Balia. Selected assignments further asked students to collect, document, or digitize local oral-literature resources, but this preservation activity functioned as an application of the core local-wisdom and contextual-learning design rather than as a separate focus. The original manuscript connected this content design with culturally grounded and multimodal learning literature (Jiang et al., 2024; Ratri et al., 2025).

Table 2 <Main Components of the Developed Teaching Materials>

Component	Main content
Learning structure	Instructions for use, Semester Learning Plan, learning outcomes, content descriptions, exercises/assignments, references, glossary, and supporting components.
Language studies	Basic concepts of Kaili language, phonology, morphology, and syntax.
Literary studies	Basic concepts of Kaili literature, oral literature, and written literature.
Local wisdom and context	Analysis of cultural values, local literary/ritual forms, and connections between the material and students' contemporary lives.
Preservation-oriented application	Selected documentation and digitization assignments that apply learning about Kaili language, literature, and local wisdom.

Contextual-learning principles were operationalized through activities that required students to connect concepts with cultural experience and the social environment. Students were guided to use community language data, examine literary forms that remain alive in the cultural environment, discuss local values, and apply learning through authentic tasks. Thus, contextual learning served as the mechanism for transforming local wisdom from static content into experience-connected learning, consistent with the original manuscript's use of (Dziubaniuk et al., 2023).

Expert validation indicated high descriptive feasibility across the three domains. The media expert awarded 72 of 75 points (96%), the language expert 49 of 50 (98%), and the content expert 142 of 145 (97%), producing an overall descriptive average of 97%. The media assessment addressed visual design and presentation, the language assessment addressed readability and language use, and the content assessment addressed appropriateness, breadth, depth, alignment with learning outcomes, and contextual-learning elements. The original manuscript situated the use of validation ratings within a broader validation literature (Taylor et al., 2020); in this study, however, the reported percentages are interpreted only as domain-specific feasibility judgments.

Table 3 <Expert Validation Results>

Validator	Obtained score	Criterion score	Percentage (%)	Category
Media expert	72	75	96	Highly Feasible
Language expert	49	50	98	Highly Feasible
Content expert	142	145	97	Highly Feasible
Average	-	-	97	Highly Feasible

Validation also generated concrete revisions. Media feedback led to stronger representation of Kaili culture on the front and back covers and improvements to visual presentation. Language feedback identified spelling, meaning, Kaili-language forms, and terminological consistency that required correction. Content feedback strengthened alignment with learning outcomes and added a preservation-oriented assignment requiring students to collect local-wisdom-based Kaili oral literature and process it into digital form. The revision cycle reflects the formative function of expert and user feedback emphasized in the original manuscript (Heen et al., 2021; Lewis et al., 2022).

The expert percentages should be interpreted within their methodological limits. They establish that the product was judged appropriate within the specified media, language, and content criteria, but they do not demonstrate that the materials improve learning outcomes, language proficiency, or preservation attitudes. Because each domain was evaluated by one designated expert, agreement statistics across multiple raters within the same construct were not available. The next research stage should therefore include classroom implementation with student learning measures and, where feasible, multiple raters per validation domain.

Limited dissemination was conducted through an academic FGD with eight evaluators: the supervisor, two co-supervisors, the course lecturer, the three validators, and the Head of the Study Program. Using the evaluation questionnaires documented in the dissertation, individual ratings ranged from 70% to 92%, with an overall mean of 86.75%. The FGD also produced qualitative comments concerning curriculum alignment, consistency of Kaili terminology, visual refinement, publication standards, periodic updating, and implementation support. In the original manuscript, dissemination and stakeholder participation were situated within wider discussions of research dissemination and participant involvement (Hu et al., 2024; Montgomery et al., 2022).

Table 4 <FGD Evaluation Results for the Teaching Materials>

Evaluator	Percentage (%)	Category
Supervisor	80	Feasible
Co-Supervisor I	70	Feasible
Co-Supervisor II	86	Highly Feasible
Course lecturer	92	Highly Feasible
Content expert validator	91	Highly Feasible
Media expert validator	91	Highly Feasible
Language expert validator	92	Highly Feasible
Head of Study Program	92	Highly Feasible
Average	86.75	Highly Feasible

The FGD recommendations focused on alignment with learning outcomes and the Semester Learning Plan, periodic updating as Kaili language and culture evolve, consistency of Kaili terminology, refinement of visual design, publication according to academic standards, and support for implementation. The course lecturer also

recommended training or assistance when using the material in class. These recommendations indicate that feasibility is partly institutional and pedagogical: a well-designed resource still requires curriculum alignment, lecturer readiness, and continuing content maintenance.

Discussion

The findings support the view that regional-language teaching materials become more meaningful when language learning is connected with cultural knowledge and learners' lived contexts. Language and culture are closely related in learning (Kim, 2020), while indigenous-knowledge integration highlights the educational value of culturally grounded knowledge and practices (da Silva et al., 2024). In the Indonesian and Kaili contexts, studies on regional-language environments, culturally responsive syllabus development, and Kaili oral traditions likewise reinforce the importance of linking language with local identity and cultural transmission (Nugraheni & Hasan, 2026; Ratri et al., 2025; Rustina et al., 2026). The present study extends this orientation by placing local wisdom inside the content, examples, tasks, and course outcomes rather than treating it as supplementary illustration. This emphasis is also consistent with the original manuscript's broader concern with culturally situated and learner-responsive resources (Bhutoria, 2022).

A second contribution concerns contextual learning and curriculum coherence. The needs analysis showed that several resources were already available, but their fragmentation did not provide students with a continuous learning pathway. The developed material therefore connects course outcomes, content, contextual activities, and assessment within one structure. This direction is compatible with outcomes-based education in Indonesian higher education (Mufanti et al., 2024) and with broader discussions of curriculum responsiveness and situated higher-education design (Agbaje, 2023; Lohan & Dafouz, 2024). It also corresponds with literature in the original manuscript on coherent curriculum integration, real-world collaborative learning, learning outcomes, learner-preferred environments, and experience-connected learning (Dziubaniuk et al., 2023; Irjayanti & Lord, 2024; Mebert, Barnes, Dalley, Gawarecki, Shafer, et al., 2020; O'Dowd, 2021; Roehrig et al., 2021; Valtonen et al., 2021). These comparisons support the interpretation that the value of the product lies not merely in compiling Kaili content, but in organizing that content into contextual learning experiences aligned with intended outcomes.

A supplementary contribution concerns preservation-oriented application. The product does not position digitization as the central innovation; instead, selected assignments ask students to document or digitize local oral-literature resources after analyzing their language, literary form, and local-wisdom values. This makes digital production an extension of contextual learning rather than a separate technology agenda. The approach is compatible with studies of digital multimodal composing and professional digital competence (Jiang et al., 2024; Skantz-Åberg et al., 2022). From the program perspective, the materials can provide a more consistent reference for lecturers and students, while subsequent updating remains necessary as language, culture, and digital practices change (Werdiningsih et al., 2024). The contribution should therefore be understood primarily as a local-wisdom-based contextual teaching-material design, with digital preservation functioning as one possible application task.

Theoretical and practical implications

The study suggests that local-wisdom integration is strongest when cultural knowledge functions simultaneously as content, context, and task rather than as an illustrative add-on. For regional-language courses, this means designing activities in which learners analyze community language forms, interpret cultural meanings, collaborate around local texts, and apply what they learn in authentic situations. The Four-D model provided an iterative mechanism for translating these needs into a structured teaching material, while expert and FGD feedback helped align the product with disciplinary, linguistic, visual, and institutional expectations. Documentation or digitization can be retained as one follow-up application, but it should remain subordinate to the core pedagogical integration of local wisdom and contextual learning. The design may be adaptable to other regional-language courses, provided that local community authority over cultural representation and terminology is maintained.

Four limitations qualify the findings. First, the needs analysis was conducted in a single study program and the 31 student interviewees do not represent all Kaili learners or speakers. Second, the qualitative analysis used researcher-led reduction, display, and verification rather than independent multi-coder thematic analysis; a formal saturation criterion and inter-coder reliability were not documented. Third, each validation domain was represented by one expert, and the dissertation did not specify a formal minimum-experience threshold for validator selection; domain-specific judgments were therefore available, but inter-rater agreement estimation within the same domain was not. Fourth, the study assessed feasibility and revision priorities rather than classroom effectiveness; no pre-test/post-test, control group, or direct measure of language proficiency or preservation attitudes was included. Future research should conduct classroom trials, include student usability data and learning outcomes, and use multiple experts per domain when agreement statistics are required.

Subsequent development should evaluate the materials in authentic classes, examine how students use Kaili in contextual tasks, assess learning gains, and collect student usability evidence. Future studies may also examine whether documentation or digitization assignments add value after the core language, literature, local-wisdom, and contextual-learning components have been implemented. Regular collaboration with speakers, cultural practitioners, lecturers, and students is necessary because language, terminology, cultural representation, and learning needs are dynamic.

Conclusions

This study demonstrates that the central pedagogical problem in the Kaili Language and Literature Course was not simply a shortage of information, but the fragmentation of linguistic, literary, cultural, and instructional resources. A Four-D development process was used to transform needs identified through observation and interviews with 31 students and two institutional informants into a structured local-wisdom-based teaching material through contextual learning. The product connects Kaili language structure, oral and written literature, local-wisdom values, contextual activities, course outcomes, and selected preservation-oriented assignments. Expert validation produced descriptive feasibility scores of 96% for media, 98% for language, and 97% for content, while an eight-member academic FGD produced ratings from 70% to 92% and an overall mean of 86.75%. The principal contribution is the integration of local wisdom as learning content, context, and activity within a standardized course resource. Because the evidence concerns feasibility rather than effectiveness, classroom implementation studies using direct measures of learning, language use, engagement, and usability are required before stronger claims about educational impact can be made.

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