Indonesian Tesol Journal, 8(2), 211-228 (2026)

INDONESIAN TESOL JOURNAL

e-ISSN: 2622-5441(Online) Journal homepage: https://ejournal.iainpalopo.ac.id/index.php/ITJ/index

Developing The Folkara: Hybrid Digital Storytelling Web Application for Bilingual Literacy and Coastal Cultural Learning among Adolescents in the Siompu Islands

Fitriani[1], Wa Ode Nursyuhada[2], Nining Frianti[3], Muhammad Chairul Aris[4], Muhammad Sohidul[5]

[1,2,3]Faculty of Midwifery, STIKES IST Buton, Baubau, Indonesia
[4]Faculty of Nursing, Politeknik Negeri Subang, Subang, Indonesia
[5]Faculty of Public Health, STIKES IST Buton, Baubau, Indonesia
email: fitriani.offce@gmail.com

Abstract: *This study details the creation and initial assessment of the Folkara Hybrid Digital Storytelling Web Application, which links bilingual literacy exercises in Indonesian and English with coastal stories from Indonesia's Siompu Islands. The evidence included an anthropological interview report, eight modified coastal narratives, digital-access replies from twenty-two students, individual thirty-row instrument-trial datasets, field perception responses, and twenty-two recorded pretest-posttest records. Instead of using empirical teacher assessments, five simulated instructor profiles were used as preparation materials. Of the 22 students, 20 said they had access to a smartphone, while 19 said they frequently lost signal, had limited data quota, or had sporadic connectivity. Unresolved discrepancies in attribution and story details were found, along with culturally significant themes, when the eight narrative adaptations were compared to the available oral-account report. On a four-point scale, field perception responses yielded a mean item score of 3.04; however, internal consistency was negative (a = −1.177), making the total score difficult to interpret. Recorded test means ranged from 45.00 to 75.00. Depending on the accuracy of participant-code pairing, an exploratory paired analysis produced Wilcoxon W = 0 and p =.0000302. Causal claims regarding learning gains are precluded by low test reliability, inadequate instrument documentation, unclear pairing provenance, and the lack of a comparison group. The study's primary contribution is a formative development account linking assessment quality, contextual technology requirements, and locally grounded narrative content.*

Keywords: *Bilingual Literacy; Coastal Cultural Knowledge Wisdom; Digital Storytelling; Folkara; Hybrid Learning; Web Application*

INTRODUCTION

Stories, place names, customs, performances, and descriptions of human interactions with the sea are all ways that coastal knowledge is transmitted. Because learners encounter vocabulary, expressions, and narrative structures in contexts related to place, collective memory, and community obligations, such narratives can offer valuable content for language education. However, simply converting oral

narratives into digital text is not enough for their educational use. Cultural safeguarding entails both documenting that knowledge and supporting communities' ongoing capacity to understand, apply, rectify, and disseminate it (UNESCO, 2011). As a result, the use of local narratives in education should consider both their potential as educational tools and the obligations associated with representing community knowledge.

The representation of cultures and communities has been highlighted by research on English language teaching materials. Keles & Yazan (2023) For instance, researchers looked at cultural representation patterns in a series of international English-language textbooks. Their findings highlight the significance of analysing whose experiences and cultural perspectives are represented in language-learning materials, even though they do not establish what Siompu students encounter in every classroom. Ratri et al. (2025) Address how learner identity and local culture influence the creation of English curricula for younger students in Indonesia. These studies justify investigating how local coastal knowledge can be incorporated into English-language activities without using translation as a stand-in for community interpretation.

The Folkara Hybrid Digital Storytelling Web Application, which was created to link literacy activities between Indonesian and English with coastal stories from the Siompu Islands, is the subject of this study. The term "hybrid" describes the intended relationship between bilingual literacy activities, digital story access, and community or classroom-mediated interpretation. Rather than claiming that each suggested learning activity or technical feature has undergone independent testing, it explains the application's instructional orientation. Eight adapted coastal narratives and learning resources, such as bilingual story materials, cultural keywords, audio narration, contextual quizzes, and consideration of access in locations with erratic internet connectivity, were the foundation for the development of Folkara. The project records currently available provide evidence of application development, narrative preparation, and field-related evaluation. However, the available documentation does not include a comprehensive technical test report showing how each application function operates.

This study fills a specific research gap rather than the general need to integrate technology, language learning, and local culture. Stories can be presented through electronic books, mobile applications, and multimedia tools, as shown by current digital folklore and multimedia learning projects (Oktaviani et al., 2020). The studies and resources taken into consideration for this project, however, do not offer the same combination of a development account that looks at the origins and unresolved variation of coastal narratives from Siompu, Indonesian-English literacy activities, the limitations of digital access reported by teenage learners, and the quality limitations of the formative evaluation tools. By documenting Folkara's development and analysing what the available evidence can and cannot establish

about its content, access requirements, and preliminary field outcomes, this study fills this methodological and contextual gap.

This study's main objectives were to document Folkara's development as a hybrid digital storytelling web application and to conduct a formative assessment of available data on its cultural content, contextual access requirements, student responses, and initial test results. The study was guided by three research questions:

1. What local needs for digital access and culture influenced the creation of Folkara?
2. What evidence is available for development and implementation at each stage of ADDIE?
3. Taking into account the limitations of measurement and data quality, what inferences can be made from the available perception and pretest-posttest records?

Rather than asserting that Folkara has already proven to be an effective teacher, the study contributes a clear development account. Within a single development cycle, it links technology requirements, instrument diagnostics, and culturally situated content. Additionally, this method identifies unresolved issues related to participant identification, cultural authorisation, technical verification, and instrument validity as priorities for further assessment.

LITERATURE REVIEW

Digital Storytelling and Culturally Situated Language Learning

When students do more than watch or listen to a finished media product, digital storytelling gains pedagogical significance. Language learning can be examined through observable activities such as reading a story, determining its setting and sequence, choosing appropriate vocabulary, explaining a cultural reference, recording an oral retelling, and editing a written narrative. Digital storytelling is a classroom technology that can facilitate learning through the creation and sharing of stories (Robin, 2008). According to Folkara, this distinction is crucial because students' development of narrative or oral language skills is not demonstrated solely by their exposure to audio or visual content.

Therefore, it is important to specify the relationship between a digital medium and a learning objective at the task level. While Oktaviani et al. (2020) looked at Powtoon in connection with students' comprehension of foreign culture, Asi & Fauzi (2023) created illustrated English folklore materials for narrative-text learning. These studies highlight the need to link multimedia resources to clear educational goals, even across different media and contexts. Potential learning tasks in Folkara include identifying narrative elements, explaining culturally specific terms, comparing different versions of a story, and creating an oral or written retelling. However, the project records currently contain no systematic collection of bilingual narratives created by students. Therefore, to provide more concrete proof of language development, later assessments should include such products.

Translanguaging and Bilingual Literacy

Instead of treating languages as completely distinct systems, translanguaging sees meaning-making as utilising learners' interconnected linguistic resources (Wei, 2018). In bilingual storytelling exercises, students can use English to explain a concept to a larger audience, keep a local expression when translation would eliminate cultural significance, and use Indonesian to explain a concept they are unfamiliar with. Translanguaging is not demonstrated by the existence of parallel texts in Indonesian and English. To demonstrate translanguaging, you must observe or collect learners' language choices, justifications, conversations, drafts, and revisions.

Therefore, comprehension and production should be linked in Folkara's intended bilingual literacy sequence. After reading or hearing a story, students can identify important details and cultural terms, discuss different interpretations, write a retelling, and revise it in response to feedback from teachers or the community. Assessment should separately consider reading comprehension, vocabulary use in context, narrative organisation, oral comprehensibility, and the accuracy and sensitivity of cultural explanations. These indicators represent instructional objectives for subsequent assessment; they should not be presented as outcomes already established by the current questionnaire and test summaries.

Mobile Learning Autonomy and Digital Access

Self-directed learning activities can be supported by mobile-assisted language learning; however, device ownership should not be equated with independent digital competency or dependable access. Jeong (2020) investigated the relationship between self-directed and mobile-assisted language learning among university EFL students. The research supports examining how students use mobile resources to achieve specific learning objectives, even though the context differs from the adolescent participants in this study. According to Folkara, pertinent indicators include students' ability to open a story, repeat the narration, return to a challenging section, complete a learning task, and save their work when connectivity is cut off.

Gou (2023) described an online collaboration and mobile application intervention with Chinese college students. Its conclusions support the need for more research on structured mobile learning. However, Folkara cannot directly benefit from the reported effects because of differences in learner age, educational context, application design, and instructional delivery. In contrast, Fitriani et al. (2023) investigated Baubau students' opinions of Duolingo. Taken together, these studies show the need to treat application perceptions, participation, and measured language performance as separate types of evidence.

Cultural Authority and Digital Heritage

Digital heritage systems shape which narratives are made visible, how they are described, and who can reuse or interpret them. In their discussion of digital interfaces for Indigenous storytelling and cultural heritage access, Shiri et al. (2021) emphasise the significance of culturally grounded design. This idea applies to Folkara: just because a digital story has been modified and uploaded does not mean that it is culturally acceptable. Opportunities for knowledge holders to check versions, make corrections, give credit where credit is due, identify knowledge that is restricted, and choose the best ways to disseminate it should be provided.

The eight Siompu narratives offer an initial corpus, but they differ in story details and attribution compared with the available oral-account report. These variations could be unsupported additions, editorial expansion, translation decisions, or recognised regional variations. The available records do not establish which explanation applies to each case. Community review should therefore preserve the provenance of each version rather than force all accounts into one definitive narrative. The regional study of La Bolontio by Fida et al. (2023) provides a local example of how a culturally meaningful place may also be discussed in relation to tourism and economic development. However, that study does not independently verify the details of the narratives used in Folkara.

Development and Evaluation of Digital Learning Applications

The five phases of the ADDIE framework—analysis, design, development, implementation, and evaluation—are used to structure instructional development. According to Sharma et al. (2023) ADDIE is a methodical approach to instructional design that connects these activities. The development record in this study is organised using ADDIE; it is not regarded as evidence that each stage was finished to the same degree. Product development, technical functionality, usability, learning objectives, and cultural authorization are all distinct evaluation questions that call for different types of proof.

The conclusions that can be derived from an evaluation are also influenced by the quality of the instruments. Under specific assumptions, Cronbach's alpha indicates internal consistency. A negative coefficient indicates that the item set needs more research, whereas a high coefficient does not prove validity or unidimensionality on its own (Tavakol & Dennick, 2011). Similarly, unless the validated SUS items and scoring method were used, a ten-item questionnaire should not be called the System Usability Scale (SUS). Folkara perception scores are therefore interpreted in light of their negative internal-consistency estimate and reported descriptively.

RESEARCH METHOD

Research Design

The ADDIE framework (Analysis, Design, Development, Implementation, and Evaluation) was used to organize this study's development-oriented mixed-methods design (Sharma et al., 2023). The qualitative component included the available ethnographic interview report, modified coastal narratives, and documentary evidence about the development context. The quantitative component included student digital-access responses, individual instrument-trial records, field perception responses, and recorded pretest–posttest scores.

At the interpretation stage, the qualitative and quantitative elements were combined. Together with quantitative data on digital access and student responses, qualitative data on narrative provenance and community expectations were considered. The limitations of the project records that were available were then assessed, and development priorities were determined using the combined evidence. This is not a controlled effectiveness trial, but rather a formative integration of existing sources. The methodology follows the idea that mixed-

methods conclusions should clarify how datasets converge, diverge, or remain unfinished (Fetters et al., 2013).

As a result, the study looked at Folkara's evolution as well as how well conclusions regarding its content, access requirements, and initial educational indicators were supported by the available data. It did not assume that improved test scores, positive opinions, or application development would inevitably indicate usability or learning efficacy.

Setting, Participants, and Data Sources

The study setting is identified in the project documentation as Kaimbulawa Village and SMPN 2 Siompu, South Buton Regency, Indonesia. The field dataset includes 22 student records: six male and sixteen female students. They were 12 years old (n = 2), 13 years old (n = 16), and 14 years old (n = 4).

The ages in the field records do not match the suggested eligibility range of 13–18 years mentioned in other documentation. The materials currently available do not clarify whether the eligibility requirements were altered during recruitment or why two 12-year-old students were included. Rather than being fixed after the fact, this disparity is openly disclosed.

The submitted materials lack adequate documentation of the recruitment process, full inclusion and exclusion criteria, and participant-flow procedure. Since the available records do not determine whether the same individuals contributed to both datasets, the 22 field records are handled differently from the 30-row instrument-trial datasets. As a result, the total number of unique participants cannot be calculated by adding the row counts.

Five simulated teacher profiles (G1–G5) with 60 prepared answers to 12 questions are also included in the study materials. These profiles were only used as planning resources. They were not regarded as empirical teacher evaluations, focus group data, or real interviews. The submitted materials do not specify how many adult knowledge holders contributed to the ethnographic report.

ADDIE Procedures and Development Evidence

The study was organized into five interrelated stages according to the ADDIE methodology. The study scrutinized each phase based on the actions and evidence recorded in the accessible study resources.

Analysis. The analysis stage examined available ethnographic accounts of coastal narratives, responses about cultural interests and learning contexts, and students' reported access to digital devices and internet connectivity. These data helped identify contextual and instructional needs, especially the need for bilingual learning resources and less reliance on constant internet access.

Design. During the design stage, the team created a proposed bilingual storytelling model that incorporates coastal narratives, cultural keywords, Indonesian–English learning materials, audio narration, contextual quizzes, and offline-first access requirements. Including these features in the design did not mean every feature had been tested or implemented; rather, they were instructional design specifications.

Development. The development stage involved examining the available narrative adaptations, content materials, and instrument-trial records. The documented corpus contained eight coastal narratives. Differences between the

adapted narratives and the available oral-account report were found, necessitating additional cultural verification. The performance of all suggested application functions under offline conditions could not be verified by the available technical documentation.

Implementation. The 22 student field records, with recorded pretest–posttest scores and application-perception responses, comprised the implementation-related evidence. Nevertheless, the intervention dates, duration, instructional sequence, teacher involvement, and implementation fidelity were not adequately established in the available documentation. As a result, the scores and recorded responses were examined as initial field evidence, without assuming that all suggested learning activities were conducted consistently.

Evaluation. The evaluation stage examined descriptive results, internal consistency diagnostics, recorded test-score differences, and disparities in the cultural materials. The quality and completeness of the available evidence were considered when interpreting the results. The evaluation was regarded as formative rather than definitive evidence of intervention effectiveness because the field instruments showed low or negative reliability coefficients and the provenance of the paired scores remained unclear.

We considered each dataset's source and purpose when documenting the data collection procedures. We treated the ethnographic interview report, student field responses, separate instrument-trial records, narrative adaptations, and preparatory teacher-profile materials as separate sources. Simulated teacher responses were not included in the empirical findings and were only utilized as preparatory materials. We did not report focus group discussions, technical testing, interaction-log collection, or completed community validation procedures because the analyzed materials did not include the corresponding records.

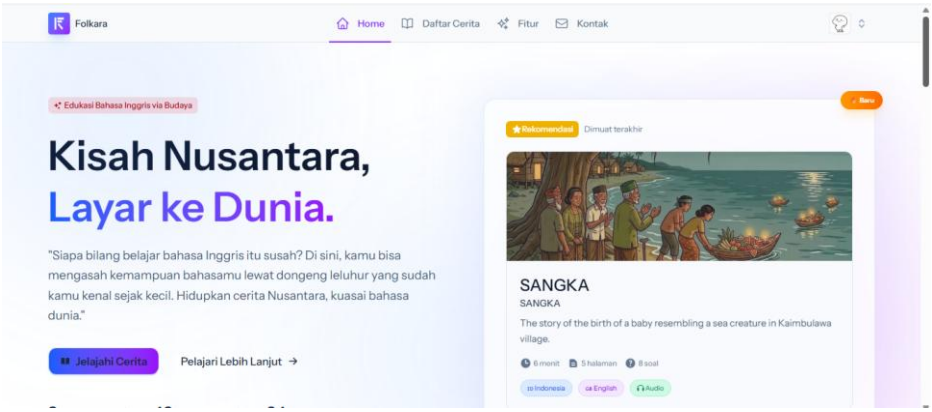


Figure 1. User Interface of Folkara

Instruments and Data Analysis

Available quantitative resources include a digital-access dataset of 22 field records, individual 30-row instrument trials, a ten-item field perception dataset, and 20-item field pretest and posttest records. A comprehensive instrument appendix with all original item wordings, construct definitions, scoring keys, reverse-coded item identification, and documented expert-review procedures is not included in the submitted materials. Therefore, without asserting that the instruments have

undergone full validation, this study presents the descriptive and reliability diagnostics currently available.

Test results, item responses, and digital-access categories were summarized using descriptive statistics. We used Cronbach's alpha and, when available, corrected item-total correlations to assess internal consistency. The means and dispersions of the recorded pretest and posttest were compiled. For the 22 coded records, an exploratory Wilcoxon signed-rank analysis was also reported; however, its inferential interpretation depends on the presumption that the codes maintain the same participant identity on both test occasions. The test result is not regarded as conclusive proof of within-person change because the score lists were sorted and the original pairing trail was not adequately documented.

The recalculated pretest mean for the independent multiple-choice instrument trial was 40.00 instead of the source-reported 45.00, and the recalculated posttest mean was 69.83 instead of 71.00. The available item-level responses were used to recalculate these corrected values using arithmetic. When the source totals did not match the item-level totals, they were discarded. This correction concerns the separate 30-row trial and does not alter the 22-record field means reported in the Findings section.

Qualitative Synthesis and Mixed-Methods Integration

Cultural authority, the return of documentation to the community, place-based identity, and educational mediation were among the themes in the ethnographic report and adapted narratives that were compared in the qualitative synthesis. Disparities between the adapted texts and the oral-account material were kept as conclusions that needed more investigation. None of these procedures are claimed because the currently available materials do not document independent double coding, intercoder agreement, or a completed member-checking procedure.

Comparison and a collaborative display were used to achieve integration. For instance, narrative discrepancies were considered alongside the reported request that documentation be returned to the community in a usable form; test-score summaries and perception were interpreted alongside reliability diagnostics; and student reports of connectivity limitations were considered alongside the application's intended access requirements. As a result, complementary development decisions were informed by the datasets, but they did not independently validate each other (Fetters et al., 2013).

FINDINGS AND DISCUSSION

Analysis of Digital Access and Learning Needs

The 22 field records included 16 female and six male students. Sixteen were aged 13, four were aged 14, and two were aged 12. The observed sample therefore differs from the proposed 13–18-year eligibility range. Smartphone ownership was widespread, but connection conditions were less favorable.

Table 1. Digital Access and Reported Application Categories

Measure	Category	n	%
Smartphone	Personally owned	20	90.91
Smartphone	Family device	2	9.09

Internet	Stable with available quota	3	13.64
Internet	Sometimes slow or limited quota	18	81.82
Internet	Frequently no signal	1	4.55
Application	Social media	10	45.45
Application	Games	6	27.27
Application	Video	4	18.18
Application	Learning or reading	2	9.09

Nineteen students, or 86.36%, reported either intermittent connection or quota problems, or frequent signal loss. This finding supports prioritizing disconnected access during design; it does not demonstrate that offline functionality works. Social media was the largest application category at 45.45%, but was not selected by a majority. Moreover, platform categories do not reveal whether students engage in reading or learning within those platforms.

Analysis of eight coastal narratives

Table 2. Coastal Narratives and Priorities for Cultural Verification

Narrative	Interpretive focus	Unresolved source issue
Sangka	Ritual obligation and sea relations	Eligible participants, offerings, and bamboo terminology
Origin of Kaimbulawa	Settlement naming and maritime livelihood	Fish trap versus fishhook; leader attribution
Mount Mangkabo	Protective leadership and place identity	Boars swimming away versus vanishing
Waindawula Fort	Defense, kinship, and customary space	Place names and renovation obligations
Wadiu-ndiu	Care, marine imagery, and oral memory	Brief mention versus an expanded plot
Mangaru	Courage and controlled performance	Regional origin needs separate attribution
Linda	Performance transmission and belonging	Palace teaching versus another regional legend
Bone Malei	Conflict and landscape memory	Defeating figure and red-sand explanation

Table 2 shows that the eight texts are connected by relationships among community, authority, the sea, and remembered places, but their links to the interview are unequal. Sangka, settlement naming, fortifications, and the removal of boars receive clearer discussion. Wadiu-ndiu appears more briefly, while the Mangaru and Linda adaptations introduce regional material requiring additional attribution. Shared cultural value does not establish a shared source for every detail.

A central theme in the reported interview concerns the return of documentation to the community. The speaker described an earlier collection of stories without accessible outputs and requested materials that local people could use. This makes accountability a development issue: a digital collection should include a practical

return pathway. Nevertheless, the available report documents requests and proposed consultations rather than completed approvals for every adaptation.

Design and Development Evidence

The design proposes a story library, contextual cultural glossary, bilingual narration, and quizzes, with an offline-first delivery model. The evidence supports these as priorities, particularly the need to reduce reliance on continuous connectivity. Source code, disconnected-task results, download sizes, device benchmarks, and function-test logs were not included. The present findings therefore establish design requirements and content work rather than verified technological performance.

Table 3. Internal Consistency and Data-Quality Diagnostics

Dataset	Rows × items	α	Principal qualification
Perception trial	30 × 10	.986	16 uniform rows; two incorrect totals
Five-item version A	30 × 5	.962	Not equivalent to first five trial items
Five-item version B	22 × 5	−.189	Not equivalent to first five field items
Multiple-choice trial pretest	30 × 20	.801	22 source totals incorrect
Multiple-choice trial posttest	30 × 20	.263	Seven source totals incorrect
Field perception	22 × 10	−1.177	Eight negative corrected item–total correlations
Field pretest	22 × 20	.212	Eight negative corrected item–total correlations
Field posttest	22 × 20	−.053	Seven negative corrected item–total correlations

Table 3 identifies a major difference between favorable trial coefficients and field measurement quality. The file labeled validity contains response tables, not a documented validity argument with coefficients and decision criteria. Its five-item data differ from the first five columns of the ten-item datasets. They cannot be treated as simple subsets or used to certify the ten-item scale. The available five-statement Word instrument also does not define all ten field columns.

The multiple-choice trial is separate from the 22-student field dataset. Recalculation changed its pretest mean from the recorded 45.00 to 40.00, and its posttest mean from 71.00 to 69.83. By contrast, all field test totals matched their item scores. These findings show why arithmetic integrity and measurement reliability must be evaluated separately: correct addition does not establish that items measure the intended competence.

Recorded Pretest and Posttest Scores

Table 4. Recorded field test outcomes and conditional paired analysis

Indicator	Pretest	Posttest or change

Students / coded records	22	22
Mean	45.00	75.00
Standard deviation	12.44	9.39
Median	45.00	75.00
Range	25–65	60–90
Internal consistency α	.212	−.053
Mean difference	—	+30.00 points
Shapiro–Wilk on differences	—	W = .816; p = .000884
Wilcoxon signed-rank	—	W = 0; p = .0000302
Group normalized gain	—	.545

The recorded field means rose by thirty points, from 45.00 to 75.00. This difference equals six more correct answers on a 20-item test if the scoring scale is interpreted as a percentage. Ten coded records showed a 30-point increase, six showed a 35-point increase, and six showed a 25-point increase. The normalized gain for the group was.545. These summaries do not prove that Folkara caused the difference; rather, they describe the records currently available.

The recorded differences' Shapiro-Wilk test results were W = .816, p = .000884. Using a tie-adjusted normal approximation, an exploratory Wilcoxon signed-rank calculation produced W = 0, p =.0000302. This inferential result assumes that each code refers to the same student on both test occasions. The pairing cannot be independently verified since the submitted score lists were arranged in descending order and the original code-to-score audit trail was not provided. As a result, the outcome is openly disclosed, but it shouldn't be taken as definitive paired evidence. Interpretation is further limited by the low internal-consistency coefficients (.212 and −.053), lack of a comparison group, and missing intervention-fidelity data.

Teacher Materials and Mixed-Methods Joint Display

The G1–G5 material contains sixty simulated answers across twelve questions. The profiles emphasize reading support, audio, connectivity, cultural interpretation, and lesson planning. They are useful for preparing actual teacher tasks and interview probes. They do not demonstrate that five teachers used the application, requested a particular revision, or confirmed usability. No empirical FGD findings or interaction-log outcomes are available.

Table 5. Joint Display of Findings and Development Implications

Issue	Integrated Evidence	Development Implication
Access	Personal devices common; 19/22 report constraints	Test disconnected reading, audio, and quiz recovery
Cultural representation	Eight adaptations; unequal source support	Review versions and record community decisions
Language learning	Local-content interest; higher recorded test scores	Assess comprehension and production in both languages
Perceived acceptance	Upper-range responses; negative alpha	Clarify wording and scoring before composite use
Teaching integration	Only simulated teacher responses available	Conduct observed tasks and actual interviews

Safeguarding	Community requests return of documentation	Deliver usable local copies and assess subsequent use

Table 5 integrates sources according to what they can establish. Access reports inform testing priorities; ethnographic discrepancies inform editorial review; and assessment diagnostics inform measurement revision. The sources provide complementary guidance, but do not all confirm effectiveness. The strongest current contribution is a traceable set of development decisions supported by local needs and a transparent account of preliminary outcomes.

Discussion

Development Contribution and Cultural Relevance

The main conclusion is that Folkara was created using a bilingual digital storytelling design and a locally situated corpus of eight coastal narratives. However, the currently available evaluation records point to issues that must be resolved before more assertive claims can be made. The eight stories offer potentially insightful content for discussing place, traditional relationships, and collective memory. However, their inclusion in a digital application does not, on its own, prove community approval or cultural accuracy. Cultural review must continue to be an iterative process involving knowledge holders, version histories, attribution, and circulation decisions, as demonstrated by the unresolved differences found in the narrative comparison (Yang & Wu, 2012).

This result supports the claim that incorporating local references into instructional materials is not enough to sustain cultural practices in education. (Paris, 2012). According to Folkara, a documented review process can be used to operationalize cultural accountability. This process should include identifying the source and version of each story, inviting relevant knowledge holders to review the adaptation, documenting corrections and disagreements, obtaining permission for the intended use, and specifying whether any material should remain restricted. The records that were submitted show a request to return the materials that were gathered, but they do not prove that the eight adaptations have received official approval. This distinction is crucial because obtaining permission to disseminate cultural knowledge and recording it are two different processes (Valizadeh & Valizadeh, 2025).

Therefore, the study does not claim that digitization has protected Siompu's coastal heritage. Instead, it highlights the editorial and cultural obligations that come with creating a digital storytelling resource. This is especially important when stories have multiple interpretations, regional allusions, or meanings that rely on local expertise. Folkara can serve as a platform for accessing and organizing such materials, but the ongoing participation of the people whose knowledge is represented is necessary for its cultural legitimacy.

Access and Technical Implications

One specific contextual finding is the coexistence of unreliable connectivity and smartphone access. While 19 students reported frequent signal loss or slow or limited-quota connections, 20 students reported having smartphone access. This suggests that having a device is not a sufficient indicator of being prepared for online education. The results confirm that access conditions should be given top priority in Folkara's ongoing development.

It is important to test the application in real-world scenarios, such as initial loading, interrupted connections, disconnected reading, audio playback, quiz completion, work saving, and synchronization following reconnection (Pollini & Giacobone, 2024). Offline-first should be referred to as a design priority rather than a verified capability until such tests are documented.

The web application's hosting and access requirements, supported browsers and devices, primary user pathways, and the circumstances under which content is still accessible should all be listed in a technical report. Instead of design mock-ups, screenshots or a functional demonstration should display the real interface. The device, browser, connection state, action taken, expected and observed results, and any flaws should all be noted in a test matrix. This would enable readers to discern the presence of a developed application from proof of its dependability and usability.

According to the access findings, Folkara's worth should not be determined solely by its feature count. Whether or not students can consistently finish worthwhile learning tasks under local connectivity circumstances should be the top priority (Wahab et al., 2024). A stable core activity may be more educationally useful than additional functions that have not been tested in the intended setting.

Interpretation of Perception and Test Results

Despite the high percentage of upper-range responses in the perception data, the ten items cannot be considered a reliable single scale without additional research due to the negative internal-consistency estimate. To proceed, retrieve the original questionnaire, define each construct, identify reverse-coded statements, and verify data entry and scoring. If the items reflect multiple facets of the experience, they should only be reported separately or in groups when a construct structure that can be justified is established.

The test means rose from 45.00 to 75.00. Weak internal consistency, unclear pairing provenance, and the lack of a comparison group must all be considered when interpreting this significant descriptive pattern. A causal conclusion that Folkara caused the increase is not supported by the available data.

A more robust follow-up assessment should maintain a participant-level audit trail, use parallel and validated test forms, report item-level performance, record instructional dosage, and include a comparison condition or another justifiable design to estimate change. Additionally, the evaluation should differentiate between oral production, written narrative production, vocabulary in context, and reading comprehension. Such a design would clarify which learning outcomes, if any, are associated with using Folkara.

Safeguarding as an Ongoing Community Process

The digital narratives in the application serve as documentation rather than evidence of ongoing cultural transmission. Safeguarding requires ongoing opportunities for community members to use, interpret, correct, and teach the stories. The call for returning documentation to the community highlights a practical obligation: contributors should receive usable copies and have an easy way to request limitations or corrections. Future assessments should examine whether families, schools, and knowledge holders use the materials over time, and whether

younger community members can recount or explain the stories in the proper context.

The editorial record should preserve the distinctions between adapted stories and oral accounts. A discrepancy could be an unsupported detail, an accepted variant, a translation error, or a shift in emphasis. To differentiate between these possibilities, a community review is required. When the source material supports multiple versions or when authorization is unclear, the digital interface should not subtly present one version as the final version.

Rather than viewing community involvement as a one-time consultation, this method treats it as an ongoing duty. Additionally, because each may need different justifications and permissions, the project must differentiate between educational materials, community archives, and visitor-oriented accounts Stefano et al. (2012). Therefore, Folkara's value should encompass more than the availability of digital stories to students; it should also account for the degree to which the application helps community members review and apply their own knowledge.

Integration Limitations and Future Research

Mixed-methods integration is strongest here when divergent results guide revision. Cultural interest supports local materials, while source differences require review; higher recorded scores encourage further testing, while poor reliability limits interpretation. The joint display makes these relationships explicit. Simulated teacher responses cannot resolve the gaps because designed examples are not independent observations (Fetters et al., 2013).

The next evaluation should confirm the participant register and pairing, align instrument versions, document technical tests, and collect actual teacher and community feedback. A bilingual assessment should separately examine comprehension, vocabulary in context, and narrative production, with cultural review of meaning. Delayed community use would address safeguarding beyond immediate engagement. These priorities follow from formative development, culturally sustaining education, and the specific limitations of this evidence set (Paris, 2012).

The wider contribution is thus a model of development accountability that connects educational design with cultural stewardship. Alias & Hashim (2012) support a practical design-and-development orientation, while the work of Shiri et al. (2021) underscores culturally informed digital interfaces. In the present project, these commitments meet in ordinary but consequential decisions: who can revise a story, whether a learner can reopen it without data, and what counts as a successful bilingual explanation. Evaluating those decisions would provide evidence that the proposed model is operating as intended. Until then, the current findings are best used to guide a documented revision cycle and a more direct assessment of learning and community use.

Implications for English Language Teaching

Folkara is useful for teaching English because it can be used to transform local stories into meaningful language exercises. Receptive and productive work should be connected in a comprehensive learning sequence. After reading or listening to a story, students can identify its setting, characters, plot, and main event, look up local vocabulary, discuss different interpretations using English, Indonesian, and

pertinent local expressions, and create an oral or written retelling. Instructors can evaluate students' oral comprehensibility, narrative organization, contextual vocabulary use, reading comprehension, and ability to explain cultural meaning. Rather than assuming these indicators from exposure to a bilingual interface, this approach makes bilingual literacy observable.

This interpretation aligns with research on digital storytelling that highlights the educational value of creating and sharing narratives (Robin, 2008; Tkacheva, 2025). Additionally, it expands on the translanguaging viewpoint by treating learners' language preferences as part of the learning process rather than assuming bilingualism simply results from having two languages (Wei, 2018). For instance, before creating an English description, a student might keep a local term in an English retelling and explain its cultural meaning in Indonesian. Vocabulary growth, meaning negotiation, and narrative production would all be observable outcomes of such a task.

However, the original instrument wording and scoring key are not fully documented, and the current field test summaries do not specify which language competencies each item measured. Therefore, reading comprehension, bilingual production, or cultural awareness cannot be specifically blamed for the 30-point discrepancy in recorded test means. Each test item should be aligned with a specified construct in a subsequent evaluation, and distinct evidence for comprehension and production in Indonesian and English should be reported (Godwin-Jones, 2023; Romadhoni et al. 2025). More direct proof of language use would come from student drafts, recordings, revisions, and classroom observations than from an overall test score.

As a result, the implications for teaching English are useful: Folkara should be assessed based on the learning activities it facilitates rather than just the bilingual content it makes available. Teachers should clearly understand each story's language goal, the assignment students must complete, and the standards by which their work is evaluated.

CONCLUSION

The Folkara Hybrid Digital Storytelling Web Application, a suggested Indonesian–English bilingual literacy model based on the coastal cultural environment of the Siompu Islands, is the main product of this study's formative development. Its primary contribution is identifying three interrelated development priorities: methodological priorities to ensure accurate assessment and culturally responsible development; contextual technology requirements that address students' limited internet connectivity; and culturally relevant content based on local coastal narratives. Important cultural themes about community identity, customary duties, maritime life, and collective memory were found through the analysis of eight adapted narratives; however, differences between the adaptations and existing oral accounts underscored the need for additional community-based cultural verification. Additionally, students' stated access conditions highlight the importance of accessible bilingual learning resources and offline-oriented functionality.

The evidence also highlights methodological problems that need to be fixed before more robust statements regarding the applicability can be made. Negative or

low instrument reliability, incomplete instrument documentation, unclear participant-pairing provenance, and the lack of a comparison group limit interpretation, even though the field records showed an increase in mean test scores from 45.00 to 75.00 and generally positive response tendencies. As a result, the results cannot substantiate Folkara's efficacy or show that pupils' multilingual literacy has improved. Instead, the study provides a foundation for the next cycle of development and evaluation and mainly supports formative development decisions. Future studies should focus on community validation of narrative material, technical testing of offline functionality, improving and validating research tools, open documentation of implementation processes, and more thorough evaluation of multilingual creation and understanding. Before the application can be assessed as an effective bilingual literacy intervention or its contribution to the preservation of coastal cultural knowledge can be determined, these procedures are required.

REFERENCES

Alias, N. A., & Hashim, S. (2012). *Design and Development Research in Instructional Technology*. IGI Global Scientific Publishing. https://doi.org/10.4018/978-1-61350-198-6.ch001

Asi, N., & Fauzi, I. (2023). Pengembangan eBook Bergambar Cerita Rakyat Berbahasa Inggris untuk Mendukung Pembelajaran Teks Naratif Berbasis Kearifan Lokal. *Jurnal Pendidikan Bahasa*, *12*(1), 61–81. https://doi.org/10.31571/bahasa.v12i1.5487

Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs-principles and practices. *Health Services Research*, *46*(2), 2134–2156. https://doi.org/10.1111/1475-6773.12117

Fida, W. N., Putra, M. R. A., & Amrin. (2023). Peningkatan potensi wisata La Bolontio terhadap pengembangan kemajuan pendapatan pemerintah desa di Siompu Kabupaten Buton Selatan. *Jurnal Cakrawala Ilmiah*, *2*(9), 3403–3412. https://doi.org/10.53625/jcijurnalcakrawalailmiah.v2i9.5656

Fitriani, Pammu, A., & Nasmilah. (2023). The students' perception about the use of Duolingo application in improving English skills at XI grade students SMKN 3 Baubau. *Journal of Namibian Studies: History Politics Culture*, *33*(3), 1–27. https://doi.org/10.59670/jns.v33i.1516

Godwin-Jones, R. (2023). Emerging spaces for language learning: AI bots, ambient intelligence, and the metaverse. *Language, Learning and Technology*, *27*(2), 6–27. https://doi.org/10.64152/10125/73501

Gou, P. (2023). Teaching english using mobile applications to improve academic performance and language proficiency of college students. *Education and Information Technologies*, *28*(12), 16935–16949. https://doi.org/10.1007/s10639-023-11864-9

Jeong, K.-O. (2020). Facilitating Sustainable Self-Directed Learning Experience with the Use of Mobile-Assisted Language Learning. *Sustainability*, *14*(5), 2894. https://doi.org/10.3390/su14052894

Keles, U., & Yazan, B. (2023). Representation of cultures and communities in a global ELT textbook: A diachronic content analysis. *Language Teaching Research*, *27*(5), 1325–1346. https://doi.org/10.1177/1362168820976922

Oktaviani, L., Mandasari, B., & Maharani, R. aldina. (2020). Implementing

Powtoon to improve students' international culture understanding in English class. *Journal of Research on Language Education (JoRLE)*, *1*(1), 19–25. https://doi.org/10.33365/jorle.v1i1.779

Paris, D. (2012). Culturally Sustaining Pedagogy: A Needed Change in Stance, Terminology, and Practice. *Educational Researcher*, *41*(3), 93–97. https://doi.org/10.3102/0013189X12441244

Pollini, A., & Giacobone, G. A. (2024). Rely on Available Resources: Designing Sustainability Education Technologies for Low Resources Scenarios. *Springer International Publishing*, 761–781. https://doi.org/10.1007/978-3-031-53122-4_45

Ratri, D. P., Rachmajanti, S., Anugerahwati, M., Laksmi, E. D., & Gozali, A. (2025). Fostering cultural competence: developing an English syllabus for young learners in the Indonesian EFL context with emphasis on local culture to maintain students' identity. *Cogent Education*, *12*(1), 1–21. https://doi.org/10.1080/2331186X.2024.2440177

Robin, B. R. (2008). Digital Storytelling: A Powerful Technology Tool for the 21st Century Classroom. *Theory Into Practice*, *47*(3), 220–228. https://doi.org/10.1080/00405840802153916

Romadhoni, A. M. H., Niratha, I. G. A., Abdurrafi, M., Ramadhan, T., Said, D. A. El, & Arini, F. Y. (2025). Pengembangan Aplikasi Cerita Rakyat Daerah Berbasis Mobile TriPanca. *Simpatik: Jurnal Sistem Informasi Dan Informatika*. https://doi.org/10.31294/simpatik.v5i2.11227

Sharma, V., Kumar, N., & Nardi, B. (2023). Post-growth Human–Computer Interaction. *ACM Transactions on Computer-Human Interaction*, *31*(1), 1–37. https://doi.org/10.1145/3624981

Shiri, A., Howard, D., & Farnel, S. (2021). Indigenous Digital Storytelling: Digital Interfaces Supporting Cultural Heritage Preservation and Access. *The International Information & Library Review*, *54*(2), 93–114. https://doi.org/10.1080/10572317.2021.1946748

Stefano, L., M., Davis, P., & Corsane, G. (2012). *Safeguarding intangible cultural heritage*. Boydell Press.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, *2*, 53–55. https://doi.org/10.5116/ijme.4dfb.8dfd

Tkacheva, A. A. (2025). The Use of Digital Storytelling as a Tool for Enhancing Sociocultural Competence University Students Learning Spanish in Uzbekistan. *Spanish Journal of Innovation and Integrity*, *40*, 293–312. https://www.sjii.es/index.php/journal/article/view/363

UNESCO. (2011). 2003 Convention for the Safeguarding of the Intangible Cultural Heritage. *MEDIA KIT*, 1–14. https://ich.unesco.org/doc/src/15164-EN.pdf

Valizadeh, S., & Valizadeh, G. (2025). Digital Storytelling for Intermediate EFL Learners: Enhancing Narrative Skills and Cultural Awareness. *International Journal of Multidisciplinary Research and Growth Evaluation*, *6*(1), 455–460. https://www.allmultidisciplinaryjournal.com/uploads/archives/20250109185544_MGE-2025-1-041.1.pdf

Wahab, A., Rukhmana, T., Ikhlas, A., & Jahrir, A. S. (2024). Transformasi Pendidikan di Era Digital:: Pengaruh Pembelajaran Online terhadap Kualitas Pendidikan Mahasiswa. *Indonesian Research Journal On Education*, *4*(4),

3123 – 3127. https://doi.org/10.31004/irje.v4i4.1490

Wei, L. (2018). Translanguaging as a Practical Theory of Language. *Applied Linguistics*, *39*(1), 9–30. https://doi.org/10.1093/applin/amx039

Yang, Y.-T. C., & Wu, W.-C. I. (2012). Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation: A year-long experimental study. *Computers & Education*, *59*(2), 339–352. https://doi.org/10.1016/j.compedu.2011.12.012