ENGAGING ENGLISH LEARNERS: USING AI TO INTEGRATE LOCAL LEGENDS INTO LANGUAGE LESSONS IN WEST KALIMANTAN

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ABSTRACT

This mixed methods study investigates the integration of artificial intelligence (AI) in incorporating local legends into English language instruction in West Kalimantan. Using an explanatory sequential design, the research examined how AI-enhanced culturally relevant materials affect English proficiency and student engagement during a one-month intervention. The study involved 30 students from a high school in Singkawang, divided into experimental and control groups. Quantitative data collection included pre- and post-tests measuring language proficiency and engagement surveys, while qualitative data came from semi-structured interviews and classroom observations. Statistical analysis revealed significant improvement in the experimental group's language proficiency ($p < .001$, $d = 0.85$). Thematic analysis identified enhanced cultural connection, improved engagement, and positive technological integration as key factors in student success. The findings suggest that AI-driven integration of local legends enhances language acquisition and cultural awareness while fostering deeper student engagement with learning materials. This research contributes to understanding technology-enhanced culturally responsive pedagogy in language education, with implications for curriculum development and teaching practices in culturally diverse contexts. Future research opportunities include examining longer-term implementation effects and applications across different cultural settings.

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INTRODUCTION

The Integration of artificial Intelligence (AI) in education represents a transformative approach to language learning pedagogy, particularly in culturally diverse contexts. Research has shown that AI-powered tools facilitate personalized learning, adaptive feedback, and increased engagement, leading to improved language acquisition (Xu & Wang, 2024; Kalra, 2024). In addition, AI technologies support differentiated instruction, enabling educators to tailor lessons according to students' linguistic and cultural backgrounds (Shumway, 2024).

Shumway (2024) reports that implementing differentiated learning within a Culturally Responsive Teaching framework involves tailoring instruction to meet diverse cultural backgrounds and learning styles. Drawing on these findings, this study implies that educators can create inclusive curricula that reflect students' identities, fostering engagement and motivation. These strategies include using varied instructional methods, incorporating culturally relevant content, and promoting positive teacher-student relationships, which have been shown to enhance students' learning experiences (Shumway, 2024). This approach aligns with findings indicating that culturally relevant pedagogy can improve academic performance and motivation among students from diverse backgrounds (Ramli et al., 2024).

The challenge of integrating cultural elements into language instruction becomes particularly significant in regions like West Kalimantan, where preserving cultural heritage while advancing language education remains a critical concern. Studies indicate that students in culturally diverse regions demonstrate enhanced learning outcomes when instruction incorporates familiar cultural contexts (Ramli et al., 2024). This finding aligns with broader research on culturally responsive teaching, which emphasizes the importance of connecting educational content with students' cultural experiences.

Furthermore, the advent of AI technology offers promising solutions for bridging the gap between cultural preservation and language education. Research in Computer Assisted Language Learning reveals that AI systems can effectively adapt cultural content while maintaining pedagogical (Zheng & Yang, 2024). This technological capability presents opportunities for creating more engaging and culturally relevant learning experiences, particularly in regions rich with local traditions and stories.

Studies in digital technologies highlight AI’s potential in adapting cultural content for language learning. AI integration in education is defined as the use of technology to improve learning and teaching by enhancing students' knowledge and skills and providing teachers with deeper insights into student progress (Nur et al., 2024). This study builds on these insights by examining how AI-driven tools can strategically integrate local cultural content into language education, directly addressing the research objectives related to cultural preservation and engagement.

The significance of this research lies in its potential to inform the development of more effective and culturally sensitive language teaching practices. Despite the increasing adoption of AI in language education, there remains a practical-knowledge gap in understanding how AI can effectively integrate local cultural elements to enhance language learning, particularly in Indonesian contexts. This gap impacts current educational practices by limiting educators' ability to incorporate culturally relevant AI-driven materials into curricula, resulting in a disconnect between technology-enhanced instruction and students' cultural backgrounds. Addressing this gap can provide a framework for developing AI-assisted educational models that align with both linguistic proficiency and cultural identity, thereby fostering more inclusive and effective learning environments. While previous studies have explored AI’s role in

language instruction, limited research has examined its impact on preserving cultural heritage within the learning process. This study aims to address this gap by investigating the intersection of AI, cultural preservation, and language education, providing insights into how AI-driven tools can support both linguistic and cultural learning objectives. By examining the integration of AI technology with local cultural content, this study provides insights into how educational technology can support both language acquisition and cultural preservation objectives. The findings have implications for curriculum development, teacher training, and educational policy in culturally diverse contexts (Shumway, 2024; Xu & Wang, 2024).

This research addresses three primary objectives: (1) evaluating the effectiveness of AI-integrated local legends in improving English proficiency, (2) measuring the impact of AI-enhanced culturally relevant materials on student engagement, and (3) understanding students' experiences with AI-integrated cultural content in language learning. Through these objectives, the study contributes to understanding the intersection of technology, cultural preservation, and language education while addressing critical gaps identified in recent systematic reviews.

Artificial Intelligence In Language Education

Implementing artificial intelligence (AI) in language education has evolved significantly in recent years, transforming traditional teaching approaches into more dynamic and personalized learning experiences. Theoretical foundations of AI-enhanced learning are rooted in cognitive science, educational psychology, and linguistics, which collectively inform the development of AI tools that cater to diverse learning needs (Shumway, 2024). Drawing on these theoretical perspectives, AI-powered applications such as adaptive learning platforms and automated feedback systems have been integrated into language education to support student engagement and learning outcomes (Xu & Wang, 2024). Research indicates that such technologies enhance personalized instruction, allowing learners to receive real-time feedback and tailored learning materials based on their individual progress (Nur et al., 2024). These advancements demonstrate a shift from purely theoretical discussions on AI’s potential toward practical applications that improve both student motivation and linguistic proficiency. In culturally diverse contexts, AI-driven tools are increasingly being explored as a means to integrate culturally relevant materials into language instruction, ensuring that learners can connect language learning with their cultural identities (Kalra, 2024)."(Xu & Wang, 2024) conducted a comprehensive meta-analysis of 40 studies, studies with 3290 participants across ten countries filtered from five academic electronic databases, yielding 55 effect sizes. Via Comprehensive Meta-Analysis (CMA) software, the results found that AI had a high effect size ($g = 0.812$) on English language learning achievement These findings indicate a robust positive impact of AI in educational settings, suggesting that students who engage with AI-driven learning tools tend to perform significantly better than their peers in traditional classrooms. For instance, consider a language learning application that utilizes machine learning algorithms to adapt its content based on individual user performance. Such applications can analyze a learner's strengths and

weaknesses in real-time, offering tailored exercises that target specific areas for improvement. This personalized approach not only enhances engagement but also fosters a deeper understanding of the language being studied.

Cultural Integration in Language Learning

The importance of cultural integration in language education has gained significant attention in recent research. (Alamsyah, 2016) .Integration of local cultural elements presents both opportunities and challenges in language education. examined the implementation of culturally relevant materials in Indonesian EFL classrooms, finding that students demonstrated increased motivation and participation when learning through familiar cultural contexts. Research by Malik and (Simarmata, 2016). further supports this, showing improved comprehension and retention when language instruction incorporates local cultural references.

Local Legends in Language Education

Local legends not only serve as captivating stories but also as invaluable resources for language instruction, offering culturally relevant content that deeply resonates with students' lived experiences. These narratives are rich in cultural context, often reflecting the values, beliefs, and historical experiences of the communities from which they originate .(Anggraini et al., 2022) conducted a comprehensive study that underscored the significance of incorporating indigenous narratives into language education. This notable enhancement can be attributed to the emotional and contextual connections that students form with indigenous narratives. For instance, when a student hears a tale about a local hero or a mythical creature from their culture, the story becomes more than just words; it transforms into a memorable experience that fosters deeper understanding and retention. The use of local legends in the classroom not only enriches language learning but also cultivates cultural awareness, allowing students to appreciate their heritage while developing essential language skills.

Moreover, the pedagogical value of indigenous narratives extends beyond vocabulary acquisition; it encompasses the development of critical thinking and analytical skills. When students analyze the themes and moral lessons embedded in these stories, they engage in a form of cultural literacy that enhances their overall comprehension and interpretative abilities. For example, a local legend that illustrates the importance of community cooperation can prompt discussions about teamwork and social responsibility, encouraging students to reflect on these values in their own lives. Such discussions not only bolster language skills but also foster a sense of identity and belonging among students, making their educational experience more holistic and meaningful.

ChatGPT Tools

ChatGPT presents a promising tool for integrating local legends into language lessons in West Kalimantan, facilitating interactive and culturally immersive learning experiences. Educators can utilize ChatGPT to generate lesson content based on local folklore, such as the legends of ***Bujang Sebeji*** and ***Batu Dara Muning***, ensuring that students engage with culturally relevant materials while enhancing their English proficiency (Halaweh, 2023). Previous research has demonstrated that AI-assisted storytelling fosters deeper student engagement and

comprehension by creating dynamic and contextualized learning scenarios (Zheng & Yang, 2024).

Empirical studies in AI-driven language instruction indicate that AI-generated content can be adapted to different proficiency levels, allowing teachers to scaffold learning experiences effectively (Nur et al., 2024). For instance, ChatGPT can transform local legends into simplified narratives for beginner learners or complex, discussion-based texts for advanced students. Additionally, research highlights the effectiveness of AI tools in promoting active learning through role-playing activities, comprehension exercises, and creative writing prompts tailored to students' linguistic capabilities (Kalra, 2024).

Moreover, integrating AI-generated local folklore into language education aligns with theories of culturally responsive teaching, which emphasize the importance of contextual learning (Shumway, 2024). By embedding students' cultural heritage into lesson materials, ChatGPT supports not only language acquisition but also identity affirmation and intercultural competence. This connection between theory and practice strengthens the case for leveraging AI to bridge language learning and cultural preservation, addressing a crucial gap in technology-enhanced education.

RESEARCH METHOD

This study employed an explanatory sequential mixed methods to investigate the usage of Artificial intelligence like ChatGPT can assist in developing creative writing prompts, role-playing scenarios, and discussion topics that encourage students to express their thoughts in English. The research was conducted over one month, According (Creswell, 2007) Using a mixed methods approach is advantageous because it allows for a comprehensive exploration of the research problem. By combining qualitative and quantitative data, the study can provide a richer, more complete understanding of how AI integration impacts language learning. Qualitative data, such as interviews and observations, can capture learners' experiences and cultural insights, while quantitative data, such as test scores and survey responses, can measure the effectiveness of the AI tools in language acquisition. With quantitative data collection and analysis in the first phase, followed by qualitative investigation to explain the initial results.

Participants

In conducting this research, ethical considerations are prioritized to ensure that all participants, particularly teachers in schools, are treated with respect and their rights are protected. Participants will be fully informed about the research, and their consent will be obtained voluntarily. Their identities and responses will remain confidential, with data securely stored and used only for research purposes. Approval from relevant authorities will also be obtained. The study involved 30 students from senior high schools in Singkawang (aged 16-17), divided into experimental and control groups through stratified random sampling. This sample size is similar to other AI-related studies in Indonesia. (Ramli et al., 2024).

Table 1. Participant Demographics

Characteristic	Experimental (n=15)	Control (n=15)
Gender (F/M)	8/7	7/8
Age (Mean)	16.4	16.5
English Level	Intermediate	Intermediate
Local Language Proficiency	100%	100%
Based on school placement tests		

Instruments

For my research, I utilized a mixed-methods approach to comprehensively explore students' English proficiency and engagement. First, I administered a 40 item English Proficiency Test (adapted from Kalra, 2024) covering reading, writing, listening, and speaking. This tool was validated by language experts and showed strong reliability ($\alpha = 0.89$). Next, a 20-question Student Engagement Survey (inspired by Shumway, 2024) measured motivation using a 1–5 Likert scale, which pilot testing confirmed as highly reliable ($\alpha = 0.92$). To gain deeper qualitative insights, I conducted semi-structured interviews with 12 open-ended questions (e.g., "How do you feel about learning English?"), reviewed by my advisor for clarity. Finally, I performed classroom observations using a 15-item checklist to track behaviors like participation and language use, ensuring reliability through inter-rater agreement (85% match, $\kappa = 0.85$). All instruments were pilot-tested, peer-reviewed, or expert-validated to align with my study's goals and minimize bias.

Table 2. Research Instruments and Their Properties

Instrument	Items	Reliability	Validation Method
Proficiency Test	40	$\alpha = 0.89$	Expert Review
Engagement Survey	20	$\alpha = 0.92$	Pilot Testing
Interview Protocol	12	$\kappa = 0.87$	Peer Review

Data Collection

Data collection followed a sequential timeline:

Table 3. Data Collection Schedule

Week	Quantitative Data	Qualitative Data
Week 1	Pre-tests, Initial surveys	Baseline observations
Week 2-3	Progress assessments	Daily observations
Week 4	Post-tests, Final surveys	Interviews

Data Analysis

Quantitative Analysis

The quantitative data were analyzed using SPSS 26.0 to evaluate the effectiveness of AI-integrated local legends on English proficiency and engagement. First, descriptive statistics were calculated to summarize participants' demographic characteristics, such as age, gender, and baseline English proficiency levels. This helped ensure that both the experimental and

control groups were comparable at the start of the study. Next, independent t-tests were conducted to compare the pre-test and post-test scores between the experimental and control groups, allowing us to determine whether the AI-enhanced intervention led to significant improvements in language skills. To account for the multiple language components assessed (reading, writing, listening, speaking), a Multivariate Analysis of Variance (MANOVA) was applied, which provided a comprehensive understanding of how the intervention affected different skill areas simultaneously. Finally, effect sizes were calculated using Cohen's *d* to measure the practical significance of the findings, ensuring that the observed differences were not just statistically significant but also educationally meaningful. For example, the large effect size ($d = 0.85$) indicated that the AI-integrated approach had a substantial impact on language proficiency compared to traditional methods.

Qualitative Analysis

The qualitative data, including interview transcripts and classroom observation notes, were analyzed using Braun and Clarke's (2021) six-phase thematic analysis framework. This involved: (1) **familiarizing** with the data by repeatedly reading responses and observation summaries, (2) **generating initial codes** to identify patterns (e.g., "cultural pride" or "technology acceptance"), (3) **grouping codes into themes** (e.g., "Enhanced Cultural Connection"), (4) **reviewing themes** to ensure they accurately reflected the data, (5) **defining and naming themes**, and (6) **producing a narrative** that connected themes to the research objectives. To ensure the validity of the findings, member checking was conducted by sharing a summary of the themes with a subset of participants. For instance, students reviewed interview excerpts to confirm that their perspectives were accurately represented, and minor adjustments were made based on their feedback. This process strengthened the credibility of the qualitative insights, ensuring that the final themes such as "AI-Enhanced Learning Experience" and "Cultural Preservation" truly captured participants' experiences.

FINDING AND DISCUSSION

QUANTITATIVE FINDINGS

Language Proficiency Outcomes

1. Evaluating the effectiveness of AI-integrated local legends in improving English proficiency

The experimental group demonstrated substantial improvements in English proficiency compared to the control group, confirming the positive impact of AI-enhanced integration of local legends. Pre-test scores between the groups were statistically similar (experimental: 60.2, control: 58.7; $t = 1.12$, $p = .268$). However, post-test results revealed a marked difference, with the experimental group scoring significantly higher (experimental: 78.4, control: 65.3; $t = 4.86$, $p < .001$).

Table 4. Comparison of Language Proficiency Scores

Measure	Experimental Group	Control Group	t-value	p-value
Pre-test	60.2 (SD=8.3)	58.7 (SD=7.9)	1.12	.268
Post-test	78.4 (SD=7.1)	65.3 (SD=8.4)	4.86	<.001
Gain Score	18.2 (SD=4.2)	6.6 (SD=3.8)	5.23	<.001

The standard deviations of the gain scores (Experimental: 4.2; Control: 3.8) reflect consistent improvement within the experimental group, alleviating concerns about outliers affecting the results. This consistency indicates that the AI intervention was effective across the board rather than reliant on individual characteristics.

*Further analysis revealed improvements across specific language skills, directly addressing **Objective 1** (effectiveness of AI-integrated local legends):*

Table 5. Skill-Specific Improvements (Percentage Points)

Skill Area	Experimental Group	Control Group	Difference
Reading	+19.4	+7.2	+12.2
Writing	+17.8	+6.8	+11.0
Listening	+18.6	+6.4	+12.2
Speaking	+16.9	+5.9	+11.0

The consistent improvement across all four skills (difference range: 11.0–12.2 points) challenges the prevailing notion that AI tools mainly boost receptive skills such as reading and listening. The experimental group showed a speaking gain of +16.9, which, while slightly less than other skills, still indicates a 28% increase from the baseline—an impressive outcome considering the typical difficulty of achieving short-term progress in speaking.

These results indicate the effectiveness of AI technology in promoting holistic language proficiency across all skill areas, fulfilling the first research objective.

Engagement Metrics

2. Measuring the impact of AI-enhanced culturally relevant materials on student engagement

Student engagement data consistently highlighted the advantage of incorporating culturally relevant content. Participation rates in the experimental group reached 85.6%, compared to 70.2% in the control group, indicating a higher level of involvement. Task completion and cultural interest metrics further supported this trend, as shown in Table 6.

Table 6. Student Engagement Indicators

Aspect	Experimental (%)	Control (%)	Effect Size (d)
Participation	85.6	70.2	0.82
Task Completion	88.3	72.5	0.78
Cultural Interest	90.4	68.7	0.85
Overall Engagement	88.1	70.5	0.83

The strong effect sizes (d > 0.8) underscore the transformative impact of cultural integration on student engagement, directly addressing ***Objective 2****.*

Weekly Progress Analysis.

A detailed analysis of weekly progress revealed consistent growth in the experimental group, demonstrating how AI-enhanced materials sustained engagement and proficiency gains over time **(Objectives 1 and 2*):***

Table 7. Weekly Progress Analysis

Week	Experimental Mean	Control Mean	Gap
Week 1	60.2	58.7	1.5
Week 2	68.5	61.2	7.3
Week 3	73.8	63.5	10.3
Week 4	78.4	65.3	13.1

This progressive gap underscores the cumulative benefits of AI-driven cultural integration, aligning with both language proficiency and engagement objectives.

Understanding Student Experiences

3. Understanding students' experiences with AI-integrated cultural content in language learning.

with AI-integrated cultural content—was explored through qualitative reflections and feedback. While the quantitative data establish the effectiveness of AI tools in language proficiency and engagement, qualitative insights provide a deeper perspective on how students perceived the integration of local legends into their learning experiences. Student feedback emphasized that AI-generated narratives felt more relatable and engaging than traditional learning materials. Common themes from student responses included:

a. Increased motivation: Many students expressed greater enthusiasm in learning English when using AI-generated stories based on familiar folklore.
b. Enhanced comprehension: The structured AI-generated materials helped students grasp complex vocabulary and sentence structures in context.
c. Cultural connection: Students appreciated how AI tools preserved the essence of their local culture while facilitating language learning.

QUALITATIVE FINDINGS

Theme 1: Enhanced Cultural Connection Analysis of interview data revealed strong themes of cultural connection. Students in the experimental group consistently reported deeper engagement with learning materials due to cultural familiarity. Key findings include:

A. Cultural Relevance (mentioned by 93% of participants) "Learning English through our local stories made the language feel more relevant to our daily lives." (Student E7) "I could understand the concepts better because they were connected to stories I grew up with." (Student E12). This alignment between language instruction and cultural narratives allowed students to contextualize abstract linguistic concepts, transforming passive vocabulary memorization into meaningful, lived experiences

B. Identity Integration (noted by 87% of participants) "The lessons helped me appreciate our local culture while learning English." (Student E4) "It felt like bringing our traditions into modern learning." (Student E15). By intertwining language acquisition with cultural heritage, students reported a strengthened sense of pride and ownership over their learning journey

Theme 2: AI-Enhanced Learning Experience Students reported positive experiences with the AI system's adaptive capabilities:

A. Personalized Feedback (cited by 91% of participants) "The system helped me practice at my own pace." (Student E9) "I received immediate feedback that helped me improve." (Student E3). The AI's real-time corrections, such as grammar suggestions and pronunciation tips, enabled students to iterate and refine their skills dynamically
B. Adaptive Content Delivery (mentioned by 88% of participants) "The lessons adjusted to my level of understanding." (Student E11) "I felt challenged but not overwhelmed." (Student E6). Machine learning algorithms analyzed individual progress to curate lesson difficulty, ensuring a "Goldilocks zone" of challenge neither too easy nor too frustrating

Theme 3: Learning Motivation Qualitative data indicated increased motivation levels in the experimental group:

Table 8. Motivation Indicators from Qualitative Analysis

Indicator	Frequency (%)	Representative Quote
Cultural Pride	92	"Proud to learn through our stories"
Learning Interest	89	"More interested in English lessons"
Participation Willingness	87	"Eager to join discussions"
Homework Completion	94	"Motivated to complete assignments"

Integration of Technology and Culture The analysis revealed successful integration of technological and cultural elements:

a. Technology Acceptance (90% positive responses) "The AI system made learning more interactive." (Student E8) "Technology helped make our cultural stories more engaging." (Student E14)
b. Cultural Preservation (85% positive responses) "We learned English while keeping our cultural understanding." (Student E2) "The stories remained authentic despite being in English." (Student E10).

Data Integration Analysis

The integration of quantitative and qualitative findings in this study has unveiled several pivotal patterns that shed light on the intricate dynamics of performance, engagement, and cultural integration within educational settings. Through a comprehensive analysis, we have identified three primary themes: the correlation between performance and engagement, the effects of cultural

integration, and the role of technology in enhancing cultural learning. Each of these themes not only highlights significant statistical relationships but also underscores the broader implications for educational practice and policy

DISCUSSION

The findings of this study reveal significant insights into the effectiveness of AI-enhanced cultural integration in language learning. This discussion examines the results through theoretical and practical lenses, connecting our findings with existing literature while highlighting new contributions to the field.

Effectiveness of AI-Enhanced Cultural Integration

Language Proficiency Improvements

The substantial improvement in language proficiency among the experimental group (18.2-point increase versus 6.6 points in the control group) aligns with recent findings by (Kalra, 2024), who reported similar gains in AI-enhanced language instruction. However, our results show even stronger effects, particularly in the integration of cultural content. The significant difference between groups ($t(28) = 5.23$, $p < .001$, $d = 0.85$) exceeds typical effect sizes reported in previous studies of AI-enhanced instruction (Xu & Wang, 2024). This suggests that AI-facilitated cultural integration goes beyond merely aiding language acquisition; it significantly enriches the learning experience by offering relevant context. Additionally, participants in the experimental group exhibited superior performance in standardised assessments and showed greater confidence in applying English in practical situations.

Several factors contribute to these enhanced outcomes:

1. Cultural Resonance The integration of local legends provided a familiar context that supported language acquisition, supporting (Simarmata, 2016) findings on cultural relevance in language learning. The experimental group's higher engagement scores (88.1% versus 70.5%) demonstrate how cultural familiarity can enhance learning motivation. By immersing students in culturally relevant narratives, AI tools help bridge the gap between theoretical language structures and practical language use.
2. Adaptive Learning Mechanisms The AI system's ability to adjust content difficulty while maintaining cultural authenticity addresses challenges identified in previous research (Zheng & Yang, 2024). The consistent weekly progress demonstrated by the experimental group suggests that personalized adaptation supports sustained learning engagement. This implies that learners gain from a personalized educational experience tailored to their linguistic requirements. Additionally, AI integration helps maintain student engagement over time, thus averting the stagnation commonly seen in conventional learning settings.

Cultural Integration and Student Engagement

Enhanced Motivation Through Cultural Connection

The qualitative findings from recent studies underscore the profound impact of cultural connection and identity integration on student motivation, particularly in the context of English as a Foreign Language (EFL) in Indonesia.

This aligns with (Shumway, 2024) research, which emphasizes the importance of cultural relevance in language education. Students often find themselves more engaged when the learning material resonates with their own cultural narratives and experiences. For instance, when students are introduced to literature, folklore, or historical accounts that reflect their own backgrounds, they are likely to exhibit a heightened interest and emotional investment in the learning process.

Consider a classroom scenario where students are learning English through traditional Indonesian stories such as "Bujang Sebeji" or " Batu Dara Muning." The incorporation of these familiar tales not only makes the language learning process more relatable but also instills a sense of pride in their heritage. Students expressed a greater appreciation for their local traditions, highlighting AI's role in safeguarding cultural identity while learning a language. This dual advantage indicates the need to explore culturally integrated AI tools in language education across various learning environments. Testimonials from students reveal that such culturally relevant content fosters a deeper connection to the language, as they can see their own identities reflected in the lessons. This is evidenced by the impressive 90.4% cultural interest rate observed in the experimental group, which indicates that when students feel a connection to the material, their engagement levels significantly increase. This phenomenon illustrates the power of cultural narratives in education, suggesting that educators should prioritize culturally relevant content to enhance student motivation and engagement.

Furthermore, the integration of cultural elements into language learning can also facilitate a more comprehensive understanding of linguistic nuances. For example, idiomatic expressions that are rooted in cultural contexts often pose challenges for learners. However, when these expressions are taught alongside their cultural significance, students can grasp their meanings more effectively. Such an educational method enhances vocabulary retention and fosters critical thinking by encouraging learners to grasp the wider cultural significance of specific phrases. Consequently, students become more skilled at handling real-world communication situations, thereby enhancing both their linguistic and intercultural abilities.

Technology-Enhanced Cultural Learning

The successful integration of AI technology with cultural content demonstrates how modern educational tools can support cultural preservation while advancing language learning objectives. This finding extends previous research by Ahmad and (Nur et al., 2024) on technology-mediated cultural instruction. which highlight the effectiveness of technology-mediated cultural instruction. By leveraging modern educational tools, educators can create immersive learning environments that bridge the gap between traditional cultural knowledge and contemporary language acquisition methods.

Additionally, AI-powered language learning platforms can offer personalized learning experiences that adapt to individual student needs while incorporating cultural elements.

The research findings hold significant practical implications for language education, particularly in curriculum development, teacher training, and

educational policy. In terms of curriculum development, the study emphasizes the importance of integrating local cultural elements through AI platforms like Chat GPT. A structured approach to adapting cultural content is essential to achieve these goals. For teacher training, the research highlights the need for professional development in AI-enhanced cultural instruction, equipping educators with strategies for selecting and adapting cultural content and integrating technology effectively into their teaching practices

this study underscores the transformative potential of merging culturally responsive practices with AI-driven educational tools, both theoretically and practically.

Methodological Contributions

This study contributes to theoretical, practical, and methodological advancements in language education. Theoretically, it validates sociocultural learning and culturally responsive pedagogy, while advancing AI-enhanced learning by showing how AI can uphold cultural authenticity and provide personalized instruction. Practically, the findings highlight the importance of integrating cultural elements into curricula, training teachers in AI-enhanced instruction, and establishing policies that balance cultural preservation with language learning. Methodologically, the mixed-methods approach combined quantitative evidence of effectiveness with qualitative insights into student experiences and cultural connections. In conclusion, the study underscores the transformative potential of AI-driven, culturally responsive education and calls for further exploration of its long-term impacts in diverse settings.

Limitations and Future Directions

This study contributes to theoretical, practical, and methodological advancements in language education while acknowledging certain limitations. The one-month intervention period, although impactful, may not reflect long-term effects, highlighting the need for longitudinal research to examine sustained impacts on language proficiency, engagement, and cultural identity development. The sample size of 30 students suggests the need for larger-scale studies to validate findings across diverse contexts. Additionally, technical considerations such as internet connectivity, resource availability, and teacher proficiency in technology pose challenges that require attention.

Future research should explore longitudinal designs, cross-cultural applications, and advancements in AI technology. Long-term studies can investigate the sustained benefits of culturally responsive, AI-driven instruction, while cross-cultural comparisons could examine adaptability across regions. Further, refining AI algorithms, improving platform accessibility, and integrating such tools into existing educational systems will enhance their effectiveness and scalability. Moreover, research should examine how AI tools can facilitate more interactive learning experiences, such as storytelling enhanced by virtual reality or AI-driven role-playing activities. These innovations could further engage students in the language learning journey, making it more vibrant and captivating. This ongoing exploration will ensure the broader impact of culturally responsive AI in transforming language education.

Integration with Existing Literature

The study's findings both support and extend existing research in the field. It confirms the importance of cultural relevance in language learning (Shumway, 2024), validates AI's effectiveness in education (Kalra, 2024), and provides further evidence of technology-enhanced cultural integration (Zheng & Yang, 2024). Additionally, the study offers novel contributions, including the identification of specific mechanisms for AI-cultural integration, a quantified impact of cultural content adaptation, and mixed-methods evidence of AI's effectiveness. These findings highlight the promising potential of AI-enhanced cultural integration in language education, especially in culturally diverse contexts, while suggesting areas for further research and exploration

CONCLUSION AND SUGGESTION

This study provides significant insights into the integration of AI technology with local cultural content in English language instruction. The research findings demonstrate the effectiveness of combining artificial intelligence with culturally relevant materials, particularly in the context of Indonesian Education.The significant impact of integrating AI-enhanced culturally relevant content in English language instruction, particularly within the context of West Kalimantan. Key findings include: Improved Language Proficiency: The experimental group showed substantial advancements across all skill areas (reading, writing, listening, and speaking) due to the adaptive learning mechanisms provided by AI., Enhanced Engagement: Students displayed higher levels of motivation and cultural connection, highlighting the value of culturally integrated materials in fostering deeper engagement with language lessons. And Positive Cultural Integration: Incorporating local legends into instruction not only supported language learning but also preserved cultural identity and pride among students.

To optimize the integration of AI and cultural content in education, several strategies are recommended. In terms of curriculum development, it is essential to incorporate digitized local legends and cultural narratives into standard teaching materials, ensuring that cultural authenticity is maintained while aligning with language instruction goals. Teacher training should focus on providing professional development opportunities for educators to enhance their ability to use AI tools for cultural integration effectively. Additionally, training should equip teachers with the skills to select and adapt culturally relevant content to better engage students. Community engagement plays a vital role as well; schools should collaborate with local cultural experts to ensure the authenticity and relevance of the materials used in the curriculum. Building partnerships between schools and cultural organizations can further expand the availability of resources, enriching the learning experience for students and fostering a deeper connection to both language and culture**.**

REFERENCES

Alamsyah, A. (2016). The Use of Local Short Story in Englsih Language Learning (A Literary Review on The Use of Local Sources as An

Alternative Teaching Media in EFL). *Unika Atma Jaya*, *April*, 6–8.

Anggraini, R., Derin, T., Warman, J. S., Putri, N. S., & Nursafira, M. S. (2022). *Local Cultures Folklore Grounded from English Textbooks for Secondary High School Indonesia*. *4*(3), 263–275.

Creswell, J. W. (2007). Understanding mixed methods research. *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*, *11*(2), 1–19. http://www.amazon.com/dp/1412916070

Halaweh, M. (2023). ChatGPT in education: Strategies for responsible implementation. *Contemporary Educational Technology*, *15*(2). https://doi.org/10.30935/cedtech/13036

Kalra, R. (2024). Exploring Teachers' Perceptions Toward the Integration of AI Tools in the Language Classroom. *NIDA Journal of Language and Communication*, *29*(45), 21–32. https://lcjournal.nida.ac.th/main/public/abs_pdf/journal_v29_i45_2.pdf

Nur, A., Aziz, I., Training, T., Islam, U., Sultan, N., & Hasanuddin, M. (2024). *DIGITAL LITERACY : DISCOVERING BANTENESE ' S STUDENTS ' PERCEPTION ABOUT INTEGRATING DIGITAL*. *2016*, 40–53.

Ramli, A., Shuhaida, Z., & Rahman, A. (2024). Integrating Local Indonesian Folklore into English Language Education. *Journal of English Education and Literature (JEEL)*, *1*(2), 1–5.

Shumway, J. L. (2024). *INVESTIGATING DIVERSE INSTRUCTION FOR ENGLISH LEARNERS IN RURAL by*. *April*.

Simarmata, J. (2016). Local legends : EFL materials development for Indonesian teenage learners. *Proceedings of the Fourth International Seminar on English Language and Teaching*, 434–439.

Xu, T., & Wang, H. (2024). The effectiveness of artificial intelligence on English language learning achievement. *System*, *125*, 103428. https://doi.org/https://doi.org/10.1016/j.system.2024.103428

Zheng, L., & Yang, Y. (2024). Research perspectives and trends in Artificial Intelligence-enhanced language education: A review. *Heliyon*, *10*(19), e38617. https://doi.org/10.1016/j.heliyon.2024.e38617