INTERACTION: Jurnal Pendidikan Bahasa Vol. 12, No.1; Mei 2025
P-ISSN: 2406-9558; E-ISSN: 2406-9566

Strengthening Strategies for Bugis Language Learning through an AI-Based Local Language Preservation Model in Barru Regency

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ABSTRACT

The partners of this program are UPTD SD Negeri 32 Barru and the Department of Education and Culture of the Barru Regency Government. This community service activity aims to provide understanding and knowledge to the community regarding policies and the history of local languages as a means to explore the existence of regional languages themselves. The enhancement of understanding about local language policies and history is integrated with a workshop on regional language preservation through the strategic use of Artificial Intelligence (AI) technology to develop and improve practical skills in creating learning processes not only through traditional approaches but also through technological approaches that are effective and easy to use. This program supports the preservation of regional languages through innovative and effective utilization of AI, while also enriching insights into the relationship between technology and regional language learning, thereby producing concrete outputs such as lesson plans, learning modules, or actions that can be implemented after the workshop.

Keywords: Bugis Language; Artificial Intelligence; Strategy; Barru Regency

INTRODUCTION

Language is an essential element of culture that functions not only as a medium of communication but also as a representation of identity, values, and traditions within society. In Indonesia, a country with great linguistic diversity, regional languages serve as cultural assets that preserve the heritage of local communities. However, in the era of globalization, the existence of regional languages has become increasingly threatened. This is largely due to the dominance of national and international languages, which causes language shifts and diminishes the use of local languages in daily interactions, especially among the younger generation.

The Bugis language, spoken predominantly in South Sulawesi, including Barru Regency, has historically played an important role in maintaining the cultural identity of its people. Unfortunately, its function and usage have gradually declined in the modern era. This condition reflects UNESCO's concern (2003) that languages not transmitted between generations are at risk of extinction. Therefore, systematic and innovative efforts are urgently needed to ensure that regional languages, including Bugis, remain preserved and relevant to present and future generations.

Language preservation is not only about safeguarding linguistic symbols but also about sustaining the values, wisdom, and knowledge embedded in them. According to Fishman (1991), regional languages are vessels for transmitting traditions and community knowledge. In this regard, the preservation of the Bugis language should not be limited to documentation or academic research but should also involve integration into educational practices at both formal and non-formal levels. By embedding Bugis language learning within schools and community activities, it is possible to foster pride, identity, and continuity in its use.

In addition, the rapid advancement of technology offers new opportunities to strengthen regional language learning. Artificial Intelligence (AI), for instance, provides innovative tools that can transform conventional teaching approaches into more interactive and adaptive ones. AI has the potential to support language learning through applications such as speech recognition, chatbots, e-books, and gamified learning platforms, which can enhance learners' engagement and personalize the learning experience. Studies (Li & Ni, 2021) have demonstrated that AI-driven learning models can significantly improve both student motivation and learning outcomes.

The application of AI in language learning also responds to the needs of today's digital society. For younger generations who are already familiar with technology, AI-based tools can serve as an effective medium for encouraging the use of Bugis in creative and engaging ways. For example, the development of Bugis-language chatbots, interactive storytelling apps, and speech recognition-based pronunciation tools could significantly enrich both classroom and extracurricular learning environments.

Furthermore, educational institutions and local communities play a crucial role in implementing these innovations. Schools in Barru Regency still maintain regional language as a mandatory subject, which provides a strategic platform for integrating AI-based learning. By involving teachers, students, and stakeholders, language preservation efforts can be strengthened through collaborative workshops, digital training, and the production of AI-assisted learning materials. The integration of technology in local language preservation is not only beneficial for students but also for teachers and communities. Teachers can improve their pedagogical practices, develop more attractive teaching materials, and align their methods with the demands of 21st-century education. Communities, on the other hand, can utilize these innovations to maintain their cultural identity and transmit it to younger generations more effectively. This aligns with the broader goal of sustainable cultural development in the digital era.

Therefore, this community service program, conducted in collaboration with Hasanuddin University and the Barru Regency Government, seeks to strengthen Bugis language learning through an AI-based preservation model. By combining traditional approaches with technological innovations, this initiative aims to promote sustainable language preservation that is both academically relevant and socially contextual. In doing so, it addresses the challenges posed by globalization while ensuring that the Bugis language continues to thrive as part of Indonesia's invaluable cultural heritage.

LITERATURE REVIEW

The preservation of local languages has long been a subject of scholarly discussion. Fishman (1991) argues that reversing language shift requires not only academic attention but also practical and community-based strategies to ensure intergenerational transmission. Languages that fail to be passed down to younger generations face the threat of extinction, as highlighted by UNESCO (2003). In this context, the Bugis language, like many other regional languages in Indonesia, requires innovative preservation efforts that combine cultural, educational, and technological approaches. In Indonesia, regional languages are taught as mandatory subjects in schools across many provinces, including South Sulawesi. However, the effectiveness of these lessons often depends on the teaching strategies and materials used. Traditional approaches to teaching local languages tend to emphasize rote memorization and grammar, which may not be engaging for younger learners. As Krashen (1982) notes, effective language acquisition requires meaningful input and interactive experiences, rather than purely structural instruction. This suggests the need for more dynamic and interactive pedagogical models.

The use of technology in education has been increasingly recognized as a catalyst for improving learning outcomes. Artificial Intelligence (AI), in particular, provides opportunities for personalized, adaptive, and interactive learning experiences. Russell and Norvig (2010) define AI as the simulation of human intelligence by machines, including the ability to learn, understand language, and make decisions.

Within the field of language education, AI has been applied in various forms such as intelligent tutoring systems, speech recognition, natural language processing, and adaptive learning platforms. Recent studies show that AI can enhance the process of language learning by offering individualized feedback, gamified learning environments, and interactive applications. Li and Ni (2021) found that AI-based learning systems improve student engagement and motivation while allowing teachers to track progress more effectively. Such innovations have been widely applied to international languages like English and Mandarin, but there remains limited research and implementation in the preservation of indigenous and regional languages.

In the context of endangered or minority languages, Natural Language Processing (NLP) has emerged as a powerful tool. Zhang, Frey, and Bansal (2022) demonstrated that NLP can assist in revitalizing endangered languages by creating digital resources, dictionaries, and educational tools. These findings highlight the potential of applying similar methods to the Bugis language, which could involve AI-supported transcription of oral traditions, digital storytelling, and vocabulary-building applications. Digital literacy also plays an important role in local language preservation. Sahidin et al. (2023) emphasized that digital literacy-based preservation programs can empower communities to integrate local languages into modern digital platforms. Through the use of e-books, mobile applications, and online media, regional languages can remain relevant to younger generations who are already immersed in digital environments. This aligns with the broader trend of using technology as a bridge between cultural heritage and contemporary society.

In addition to technological aspects, language preservation requires strong policy and community involvement. Government regulations, local curriculum development, and teacher training programs are crucial to ensure the sustainability of these efforts. Collaborative initiatives involving universities, local governments, and community organizations can strengthen the foundation for long-term preservation. This collaboration ensures that local languages are not only taught but also celebrated as a core part of cultural identity. Overall, the literature suggests that the preservation of the Bugis language should adopt a holistic model that integrates education, technology, and community participation. While traditional teaching methods remain valuable, the incorporation of AI and digital tools presents a promising direction for making language learning more engaging, effective, and sustainable. By drawing on existing research in language acquisition, AI applications, and digital literacy, this study aims to contribute to the development of innovative strategies that support the survival and growth of the Bugis language in the digital era.

METHOD

Design and Sample

This community service program employed a participatory and collaborative design that involved schools, teachers, local government, and the academic team from Hasanuddin University. The approach emphasized the active engagement of stakeholders to ensure the program's outcomes were relevant and applicable to the local context. The primary sample included UPTD SD Negeri 32 Barru as the partner school and the Department of Education and Culture of Barru Regency as the institutional collaborator. Teachers, students, and community members were also directly involved, making the program a shared effort in preserving and strengthening the teaching of the Bugis language.

Instruments and Procedures

The implementation of the program was structured into several stages. The first stage was the preliminary survey, which included field identification at the partner school and coordination with the Department of Education and Culture to assess the current state of Bugis language teaching, identify the challenges faced by teachers, and map available resources. The second stage was coordination and planning, carried out through a formal meeting with local government and stakeholders to set the timeline, agenda, and technical requirements, while also symbolizing the official collaboration between Hasanuddin University and Barru Regency. The third stage was the training and workshop sessions, where experts from the university delivered lectures on local language policies, the cultural significance of the Bugis language, and intergenerational preservation, as well as introduced digital and AI-based tools for classroom practices. The fourth stage consisted of interactive workshops and practice-based simulations, during which participants practiced using AI applications such as Quizizz, Slido, Baamboozle, and Quizalize to design Bugis language learning activities, thereby equipping teachers with practical skills in integrating technology into their teaching routines. The fifth stage focused on community participation and collaborative learning by engaging teachers, education officials, students, and community members in joint activities, fostering an environment where best practices and experiences could be shared to strengthen collective ownership of the preservation effort. The sixth stage was reporting and dissemination, which produced learning modules, teaching plans, and digital learning products that were shared with local government, schools, and through academic publication to ensure wider accessibility. Finally, the seventh stage emphasized sustainability and follow-up, encouraging teachers and officials to continue integrating AI-based methods into regular teaching practices and to independently replicate similar workshops in the future.

Data Analysis

Data analysis was conducted qualitatively, focusing on the effectiveness of stakeholder participation, the impact of the training, and the outputs of the workshops. Information was drawn from the survey results, which highlighted teacher challenges and community needs, as well as from observations made during the workshops and simulations. Additional insights were gathered from the learning outputs such as modules, teaching plans, and digital products, along with feedback and shared experiences from teachers and community members. The analysis emphasized the practical applicability of the methods, the degree of engagement among participants, and the sustainability of the program. Ultimately, the findings were consolidated into reference materials for teaching and academic documentation, thereby ensuring that the program contributed not only to immediate improvements in Bugis language teaching but also to long-term strategies for preservation.

RESULT AND DISCUSSION

The first stage of the program began with a coordination meeting between Hasanuddin University and the Barru Regency Government. This meeting aimed to establish a clear schedule for the implementation of the community service program and to align the objectives with the needs of local stakeholders. It also served as a formal collaboration event, symbolizing the shared commitment of both institutions to preserve the Bugis language through innovative strategies.

Following the coordination meeting, the program proceeded with the implementation of a workshop under the theme *"Optimization of MGMP (Subject Teacher Working Group) for Local Languages in Barru Regency: Strategic Steps for Preserving Local Languages in the Digital Era."* The workshop invited key stakeholders, including the Head of the Department of Education of Barru Regency, the Chairperson of the Local Language MGMP, and 25 local language teachers across Barru Regency. Their presence demonstrated strong institutional support and community engagement.

The workshop began with participant registration, facilitated by university students involved in the program. This was followed by welcoming speeches from representatives of Hasanuddin University and the Barru Regency Government. In his speech, the Head of the Department of Education emphasized the importance of innovation in teaching local languages, highlighting that technology can create a more enjoyable learning environment and strengthen teacher competencies in the digital age. The first presentation was delivered by Pammuda, S.S., M.Si, who discussed national and regional policies on local language preservation. He emphasized that preserving local languages requires overcoming challenges through multi-stakeholder collaboration, technological integration, and strong policy frameworks. This presentation encouraged teachers to view policy as a foundation for language revitalization.

The second presentation, delivered by Nasihin, S.S., M.A, focused on *Local History and the Preservation of Regional Languages among Contemporary Learners*. He highlighted the importance of teaching local history to strengthen students' cultural identity and pride. He also introduced digital tools such as e-books and local history apps in the Bugis language as effective ways to integrate cultural content with technological learning. The third presentation was conducted by Muttahara Nemin Kaharuddin, S.S., M.Hum, who introduced practical applications for teaching local languages using digital platforms. Tools such as Slido, Quizizz, Baamboozle, and Quizalize were presented as innovative solutions to make Bugis language learning more interactive and enjoyable. Teachers were trained on how to design quizzes, games, and interactive sessions that motivate students while also reinforcing vocabulary and cultural knowledge.

The interactive sessions of the workshop generated active participation from teachers, who raised questions about government policies, teacher training, and the sustainability of digital tools in the classroom. The discussion emphasized that innovative strategies are needed to ensure that the Bugis language remains relevant in the face of globalization and technological change. Participants also highlighted the importance of adapting digital tools to local contexts. At the end of the workshop, tokens of appreciation were given to the Barru Regency Government and the Chairperson of the Local Language MGMP. This gesture symbolized the collaborative spirit of the program and reinforced the commitment to sustaining the Bugis language. The outputs of the program included lesson plans, digital learning materials, and practical strategies that teachers could directly apply in their classrooms.

Table 1. Summary of Workshop Activities and Outcomes

Activity	Description	Key Outcomes
Coordination Meeting	Hasanuddin University & Barru Regency Government	Established schedule, aligned objectives
Workshop Opening	Registration & speeches from stakeholders	Institutional support and commitment
Presentation 1	Local language policies (Pammuda)	Awareness of policy frameworks for preservation
Presentation 2	Local history and preservation (Nasihin)	Integration of history and digital tools
Presentation 3	Digital platforms for language learning (Muttahara)	Practical skills in Quizizz, Slido, Baamboozle, Quizalize
Interactive Session	Q&A and discussion with teachers	Identification of challenges and strategies

Closing Session	Token presentation & group photo	Strengthened collaboration & sustainability
Outputs	Lesson plans, modules, digital resources	Practical tools for classroom application

The results of this program highlight the significant role of collaboration between academic institutions, local governments, and schools in strengthening local language preservation. The involvement of multiple stakeholders ensured that the outcomes were not only academic but also practical and applicable within the community. This aligns with Fishman's (1991) argument that language revitalization requires both institutional and community support. One of the key findings is the importance of policy as a foundation for sustaining local language programs. The presentations emphasized that policies at both national and regional levels must be translated into practical classroom activities. Without strong policy implementation, efforts to preserve local languages risk becoming fragmented and unsustainable.

The integration of local history into language learning was also found to be a powerful strategy. As discussed by Nasihin, linking Bugis language instruction with cultural narratives and local history enhances students' sense of identity and pride. This supports UNESCO's (2003) position that language preservation must also involve cultural preservation, as language and culture are inseparable. Another important discussion point is the effectiveness of AI and digital tools in language education. Applications such as Quizizz and Slido provided teachers with interactive and gamified methods of teaching, which significantly increase student motivation. This finding echoes Li & Ni (2021), who argue that AI-based learning systems can personalize and improve student engagement in language learning.

However, the discussion also revealed challenges, particularly in terms of digital literacy and accessibility. Some teachers expressed concerns about the sustainability of using AI-based tools in rural areas with limited technological resources. This reflects Sahidin et al. (2023), who noted that digital literacy is a crucial prerequisite for integrating technology into local language preservation. The workshop further demonstrated that teachers are eager to innovate but require continuous training and institutional support. This suggests that professional development programs should be expanded to include digital pedagogy for local language teaching. Universities can play an important role in providing training and research-based resources to teachers.

The symbolic acts of collaboration, such as the token presentation and group photo, were not merely ceremonial but reinforced a sense of collective responsibility for preserving the Bugis language. This reflects the broader principle that language preservation must be a shared effort across academic,

governmental, and community levels. the discussion highlights that the preservation of the Bugis language requires a multi-dimensional approach combining policy, education, technology, and community participation. While challenges such as limited resources remain, the use of AI and digital platforms presents a promising pathway to make language learning more relevant, engaging, and sustainable in the digital era.

CONCLUSION

This community service program demonstrated that the preservation of the Bugis language can be strengthened through innovative strategies that combine traditional educational approaches with digital and AI-based tools. The collaboration between Hasanuddin University, the Barru Regency Government, and local schools created a platform for teachers and communities to enhance their competencies in using technology as a medium for local language learning. The program highlighted that language preservation must go beyond symbolic efforts and should be translated into practical actions that directly impact teaching and learning processes. The workshop activities revealed that integrating policy, local history, and digital applications provides a holistic model for sustaining the Bugis language in the digital era. Teachers gained new insights into the importance of aligning local language instruction with cultural identity, while also acquiring practical skills in utilizing platforms such as Quizizz, Slido, Baamboozle, and Quizalize. These tools not only make learning more engaging but also help bridge the gap between traditional knowledge and modern technology. In conclusion, the preservation of the Bugis language requires a collaborative, innovative, and sustainable approach. While challenges such as limited digital literacy and technological infrastructure remain, the program demonstrated that with proper training and community support, AI-based learning can significantly contribute to the revitalization of local languages. The findings emphasize that preserving the Bugis language is not only the responsibility of educators but also of the wider community, supported by government policies and academic initiatives.

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