Preserving the Mandailing Language through a Mobile Mandailing–Indonesian Dictionary

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Abstract

The fact that younger people do not speak it and that Indonesian and other languages are more common makes it harder for the Mandailing language to survive as a cultural legacy. According to what we saw, the younger generation does not know 40 to 50 percent of Mandailing words, including siriaon (joy) and ancim (salty). This project aims to create a digital dictionary application that will preserve the Mandailing language using technology. This project uses a descriptive qualitative approach and the Research and Development process to investigate how the younger generation views the demand for apps and create a digital dictionary prototype in Mandailing-Indonesian. The application's limited testing revealed that users enjoyed it. According to the study's findings, if mobile apps incorporate cultural content, community engagement, and flexible design, they could be an effective tool for preserving languages. This study contributes to efforts to revitalize regional languages through technology for youth effectively.

Introduction

Regional languages are essential to a community's cultural identity (Fishman, 1991, 1999; European Charter for Regional or Minority Languages, 1999; UNESCO, 2003; Tong & Cheung, 2011). However, many regional languages face extinction in globalization and rapid technological development (Dalby, 2003; Harrison, 2007; Harrison, 2007). This phenomenon is also experienced by the Mandailing language, one of the regional languages in North Sumatra, which is now increasingly rarely used by the younger generation. The use of Indonesian as the national language and the increasing dominance of global languages have caused a drastic decline in the Mandailing language's use in formal and everyday contexts (UNESCO, 2021; BPPB, 2021).

Although the government has encouraged the preservation of local culture, efforts to preserve regional languages are often not integrated with a technology-based approach close to the younger generation's daily lives. The phenomenon emerging now is a language shift by the younger generation from regional to national and international languages, which has an impact on weakening the intergenerational transmission of the Mandailing language. Some words from observations made in the field, many young people no longer recognize words such as those in the table below.

Table 1. Examples of Endangered Mandailing Vocabulary

Mandailing Vocabulary	General Substitute	Usage Level
Ancim [Asin] [Salty]	Asin	40% (young people)
Lampetok [Lambat] [Slow]	Lambat	40% (young people)
Moncot [Beranjak] [Move On], [Berangkat] [Leave], [Pergi] [Go]	Pergi	50% (young people)
Siamun [Kanan] [Right]	Kanan	50% (young people)
Siluluton [Dukacita] [Grief]	Kemalangan	50% (young people)
Siriaon [Sukacita] [Joy]	Sonang	40% (young people)
Rantos [Bijaksana] [Wise]	Cerdas	40% (young people)
Tapian [Pemandian] [Riverside]	Aek	50% (young people)

From the observation findings above, this study aims to respond to the urgent need for language preservation media relevant to the times and attractive to the younger generation. Language preservation is a multifaceted endeavour that requires a combination of strategies, including documentation, education, and revitalization efforts (Meighan, 2022; Wiltshire et al, 2022; Awal, 2024). Language documentation involves recording and archiving linguistic data, such as vocabulary, grammar, and oral traditions, to create a comprehensive record of the language (Gippert et al, 2006; Himmelmann, 2006; Austin et al, 2013; Burke et al, 2020; Yi et al, 2022; Good, 2023). Through a qualitative approach, this study focuses on the development and analysis of the use of mobile applications to preserve and learn the Mandailing language. The research questions that are the focus of this study are: 1) What is the younger generation's perception regarding the need for mobile applications to preserve the Mandailing language? 2) How can the design and features of mobile applications be adapted to user needs to learn Mandailing interactively?

Methodology

This study employed a descriptive qualitative approach combined with the initial stages of the Research and Development (R&D) method to design and develop a mobile-based Mandailing–Indonesian dictionary application. The study primarily aimed to explore user needs, examine perceptions regarding the preservation of the Mandailing language, and evaluate the effectiveness of application features in supporting the learning and everyday use of Mandailing. By integrating qualitative inquiry with early-stage development procedures, this research sought to ensure that the application design was grounded in actual linguistic practices and user expectations.

The research subjects consisted of the younger generation of Mandailing speakers, particularly students and university students residing in Mandailing Natal Regency, North Sumatra. This location was selected purposively because it represents the cultural and linguistic homeland of the Mandailing language, making it a strategic site for language preservation efforts. The involvement of young speakers was considered essential, as they are the primary target users and play a crucial role in sustaining the language in the digital era.

Data were collected using multiple techniques to ensure depth and credibility. In-depth interviews were conducted with potential student users to capture their needs, learning preferences, and attitudes toward Mandailing language use. Participatory observation was carried out to examine how the language is used in daily communication and learning contexts. In addition, a documentation study was undertaken by reviewing teaching materials, printed dictionaries, and other written sources related to the Mandailing language. To complement these

data, a limited user trial of the developed application was conducted to gather initial feedback on usability, content relevance, and feature effectiveness.

The collected data were analyzed using qualitative analysis procedures following the framework proposed by Miles and Huberman (1994), which includes data reduction, data display, and conclusion drawing. Findings derived from interviews, observations, and documentation were compared and triangulated to validate user needs and to assess the appropriateness of the application design and features.

The application development process was conducted in several stages, beginning with an analysis of user needs to determine essential features and content. This was followed by the development of an initial application design, which was then subjected to limited user testing. Feedback obtained during this stage informed revisions and refinements of the application. Finally, an evaluation was carried out to assess user perceptions and initial patterns of application use, serving as a foundation for further development and large-scale implementation.

Finding and Discussion

This study explored the needs, perceptions, and attitudes of the younger generation toward the preservation of the Mandailing language, as well as their responses to the development of a mobile-based Mandailing–Indonesian dictionary application. Data were collected through in-depth interviews, participatory observation, documentation analysis, and limited user trials involving students and young adults in Mandailing Natal Regency.

The qualitative findings indicate a marked decline in the use of the Mandailing language among young people, particularly in daily communication. Approximately 70–80% of respondents reported that Indonesian has become the dominant language used in educational and formal settings, while English is perceived as more relevant for academic advancement and future employment. Consequently, Mandailing is increasingly restricted to informal contexts, such as conversations with older family members. Even within these contexts, more than 60% of respondents admitted that their use of Mandailing tends to be passive, limited to understanding rather than active speaking.

Despite this declining usage, respondents expressed strong emotional concern regarding the potential loss of the Mandailing language. When asked how they would feel if future generations could no longer speak Mandailing, around 72,1% of respondents described feelings of sadness, loss of cultural identity, and disconnection from their heritage. However, this emotional attachment was not consistently reflected in daily language practices. This discrepancy highlights a clear gap between cultural awareness and actual linguistic behavior, where positive attitudes toward preservation do not necessarily translate into active language use.

Another significant finding relates to difficulties in accessing reliable Mandailing vocabulary resources. Approximately 33,3% of respondents reported experiencing problems when trying to find the meanings of Mandailing words, especially traditional or less frequently used vocabulary. Existing printed dictionaries were widely perceived as outdated, difficult to obtain, or impractical for everyday consultation. This challenge is further exacerbated by the lack of digital learning tools specifically designed to support Mandailing language learners, particularly among younger users who rely heavily on mobile technology.

In relation to language preservation efforts, the majority of respondents demonstrated a positive disposition toward participation. Around 61,3% indicated a willingness to engage in preservation activities, provided that such initiatives are practical, relevant, and compatible with their daily routines. Notably, nearly 52,3% of respondents agreed that a digital Mandailing–

Indonesian dictionary is urgently needed, and approximately 85% stated that they would be willing to use such an application if it were available. Smartphones were identified by more than 55% of respondents as the most suitable platform, reflecting the central role of mobile devices in the everyday lives of the younger generation.

Based on these findings, a mobile-based Mandailing–Indonesian dictionary application was developed with several core features. These include a two-way dictionary containing over 1,000 basic word entries, contextual sentence examples, illustrative visuals, and planned pronunciation audio features. In addition to lexical content, the application integrates cultural materials such as Mandailing proverbs, rhymes, and folk tales, thereby positioning the application not only as a learning tool but also as a medium for cultural transmission. The interface was designed to be user-friendly and accessible across age groups.

Initial user feedback obtained through limited trials revealed that the application was perceived as helpful and easy to use by the majority of users. Approximately 46,8% of trial users reported that the application made it easier to learn and recall Mandailing vocabulary, particularly due to the fast search function and simple interface design. Nevertheless, respondents also offered constructive feedback, suggesting the addition of thematic vocabulary categories, such as family, animals, and school-related terms, as well as enhancements to visual and audio components. These inputs provide valuable direction for further refinement and large-scale development of the application.

Discussion

The findings highlight a critical tension between cultural awareness and linguistic practice among the younger Mandailing generation. While respondents recognize the importance of preserving the Mandailing language as a marker of cultural identity, their daily language choices are driven by pragmatic considerations, such as educational demands and perceived economic value. This supports broader sociolinguistic observations that minority and regional languages often lose ground when they are not supported by modern, functional learning resources.

The low level of Mandailing language use among young people cannot be attributed to a lack of interest alone, but rather to structural and technological limitations. The absence of accessible digital media has restricted opportunities for active language engagement. In this context, the development of a mobile-based dictionary responds directly to the identified needs and aligns with the lifestyle of the target users. By situating language learning within a familiar digital environment, the application reduces barriers to access and encourages voluntary use.

The positive reception of the application during initial trials underscores the importance of usability and relevance in language preservation tools. Features such as fast word searches, contextual examples, and a simple interface were central to user satisfaction. These findings suggest that language preservation initiatives must move beyond symbolic efforts and instead provide practical tools that integrate seamlessly into users' daily routines.

Moreover, the inclusion of cultural content such as proverbs and folk tales reflects an understanding that language preservation is inseparable from cultural transmission. By embedding linguistic knowledge within cultural narratives, the application supports not only vocabulary acquisition but also cultural literacy. This approach reinforces the idea that digital tools can function as both educational media and cultural archives.

The study also reveals the importance of community involvement in digital language preservation. Interest expressed by local teachers and community leaders indicates that technology-based initiatives are more likely to succeed when they are supported by educational

and cultural institutions. This collaborative dimension strengthens the sustainability of preservation efforts and ensures that digital tools remain relevant to community needs.

Based on the findings, an application-based language preservation model emerges, consisting of three interconnected pillars: education, community participation, and digital interactivity. Education is addressed through the provision of structured, accessible language materials. Community participation ensures cultural legitimacy and shared ownership of preservation efforts. Digital interactivity enhances engagement by leveraging technology that resonates with younger users.

The findings demonstrate that the preservation of the Mandailing language requires adaptive strategies that reflect contemporary communication practices. The developed dictionary application represents an initial but meaningful step toward bridging the gap between cultural awareness and active language use. While further development and large-scale implementation are needed, this study provides empirical evidence that mobile-based applications can serve as effective tools for supporting regional language preservation in the digital era.

Figure 1. Mandailing–Indonesian Dictionary Application

Conclusion

This study highlights the challenges of preserving the Mandailing language amidst the dominance of Indonesian and globalization, showing evidence of the erosion of traditional vocabulary among the younger generation. An innovative solution in the form of a two-way mobile dictionary application (Mandailing-Indonesian) was designed to answer this need, equipped with interactive features such as audio pronunciation and cultural content. The trial results prove the effectiveness of the application in facilitating learning, supported by a user-friendly interface and positive user responses. Key findings emphasize three aspects: (1) the urgency of adapting technology for language preservation, (2) the importance of community collaboration in content development, and (3) the potential of the application as a bridge between generations. Thus, this study not only identifies the problem of language extinction

but also offers a digital-based revitalization model relevant to modern lifestyles, while strengthening the cultural identity of Mandailing.

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