ICEET 2026
The International Conference on English Education and Technology

Vol.01 No.01, February 2026

IMPLEMENTATION OF REGIONAL LANGUAGE AI CHATBOTS FOR LOCAL CROSS-CULTURAL COMMUNICATION

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Abstract

This research is important to determine the extent to which regional language AI chatbots can support local cross-cultural communication effectively. In addition, this research can also identify obstacles and challenges faced in the implementation of regional language chatbots. The purpose of this research is to implement AI chatbots that use regional languages in the context of local cross-cultural communication and to determine the ability of regional language AI chatbots to convey messages effectively and in accordance with local cultural values. This research uses a qualitative approach with a qualitative descriptive method. This research was conducted in a local community or community environment that uses regional languages. The informant determination technique in this study uses purposive sampling. Data collection techniques use in-depth interviews and observations. Data analysis techniques are carried out interactively and continuously, following the qualitative data analysis model proposed by Miles, Huberman. Data wetness techniques use source triangulation, techniques and member checks. The main findings focus on the implementation of Artificial Intelligence (AI)-based chatbots that use regional languages as a medium of communication with local communities. This chatbot is used as a means of conveying information and interaction with users from diverse local cultural backgrounds. The conclusion of this study is that implementing regional language AI chatbots involves not only the technical aspects of system development but also an understanding of the local social and cultural context. The use of Artificial Intelligence technology, particularly Natural Language Processing, enables chatbots to understand and respond to regional languages more naturally and contextually.

Keywords: AI Chatbox, Regional Language, Cross-Cultural Communication, Local

INTRODUCTION

The development of artificial intelligence (AI) technology has brought significant changes to the way humans communicate and interact. AI is no longer limited to data processing, but has also become capable of understanding and generating natural language through Natural Language Processing (NLP). One rapidly developing form of AI implementation is the chatbot, an automated conversational system designed to interact with humans using natural language. Chatbots are now widely used in various fields such as public services, education, business, and digital media.

In the context of communication, chatbots act as intermediaries, bridging interactions between humans and digital systems. A chatbot's ability to understand the user's language is a key factor in effective communication. However, most chatbots currently developed still focus

on global languages such as English or the national language, while regional languages tend to receive less attention.

Indonesia is a multicultural country with hundreds of regional languages used by the community in everyday life (Koentjaraningrat, 2009). Regional languages serve not only as a means of communication but also as a cultural identity and a means of transmitting local values. In social interactions at the local level, the use of regional languages is often more effective and meaningful than national or foreign languages. Regional languages convey distinctive cultural nuances, politeness, and social closeness.

Amidst globalization and digitalization, the use of regional languages in the digital space faces significant challenges. Many digital platforms do not yet optimally support regional languages, forcing users to switch to more dominant languages. This situation has the potential to marginalize regional languages and weaken their function in modern communication. If not balanced by technological innovation, regional languages risk being increasingly abandoned by the younger generation.

On the other hand, local communities are increasingly interacting across cultures, both between regions and between social groups. This interaction requires a sensitive understanding of culture and language to avoid misunderstandings.

Crosscultural communication is the process of exchanging messages between individuals or groups with different cultural backgrounds, whether in terms of language, values, norms, or social customs (Gudykunst & Kim, 2003).

Local cross-cultural communication occurs not only between people from different regions, but also between generations, social backgrounds, and diverse cultural communities within a single region. Differences in regional languages, dialects, and communication norms can create barriers to local cross-cultural communication. Mistakes in the use of language or cultural expressions can lead to conflict or misinterpretation.

Therefore, technological solutions are needed that can not only process language but also understand the local cultural context inherent in that language. AI chatbots in regional languages are one potential alternative solution to address this challenge. With the ability to understand and use regional languages, chatbots can serve as an inclusive and contextual communication medium.

Implementing regional language AI chatbots allows people to interact with digital systems using familiar languages relevant to everyday life. Furthermore, regional language chatbots can help strengthen the presence of local languages in the digital space, ensuring that regional languages not only survive but also thrive in line with technological advancements.

However, developing AI chatbots in regional languages is not easy. Limited regional language data is a major challenge in training AI models. Many regional languages lack adequate digital data corpuses, either in text or conversational form, resulting in low chatbot accuracy.

Beyond technical aspects, another challenge lies in the cultural complexities inherent in regional languages, such as levels of politeness, social structures, and symbolic meanings. Chatbots that do not understand cultural aspects risk producing responses that are inconsistent with local norms, leading to misunderstandings in communication.

Therefore, implementing AI chatbots in regional languages requires attention to cultural sensitivity to function effectively in cross-cultural communication. In the context of public

services, regional language chatbots can be used to provide information to the public in a more easily understood manner, especially for groups less fluent in the national language.

The use of regional languages in public service chatbots can also increase trust and closeness between the public and government institutions or related organizations. In education, AI chatbots in regional languages can be used as contextual and culturally based learning media.

These chatbots can help students understand material using a more familiar linguistic and cultural approach. On the other hand, regional language chatbots can also serve as a means of documenting and preserving local languages through the digitization of conversations and vocabulary.

The implementation of regional language AI chatbots also contributes to strengthening local cultural identity amidst the dominance of global culture. However, to date, research and implementation of regional language AI chatbots in Indonesia remains relatively limited and uneven. Most research focuses on national or foreign languages, so studies on regional language chatbots still require in-depth research.

Furthermore, the local cross-cultural communication aspect of chatbot implementation has not been comprehensively studied. However, local cross-cultural communication has unique characteristics that differ from international cross-cultural communication. Local cross-cultural interactions often involve traditional values, customary norms, and strong social relationships.

AI chatbots designed without considering these aspects have the potential to be unwelcome by local communities. Therefore, research on the implementation of regional language AI chatbots needs to be conducted with a holistic approach, encompassing technological, linguistic, and cultural aspects.

This research is crucial to determine the extent to which regional language AI chatbots can effectively support local cross-cultural communication. Furthermore, this research can identify the obstacles and challenges faced in implementing regional language chatbots.

Thus, AI chatbots function not only as communication tools but also as a means of cultural preservation. The implementation of regional language AI chatbots is also in line with inclusive and linguistically equitable digitalization efforts. Technology should not only serve dominant languages but also provide space for minority and local languages.

This is crucial to ensure that all levels of society can enjoy the benefits of technology without losing their cultural identity. In the context of sustainable development, preserving regional languages through digital technology is a crucial aspect of maintaining cultural diversity.

AI chatbots in regional languages can be a strategic innovation in connecting modern technology with local wisdom. However, without in-depth academic research, the implementation of such chatbots risks suboptimal performance or even failure.

Therefore, this research is needed to provide a scientific foundation for the development of AI chatbots in regional languages. The focus on local cross-cultural communication provides a new perspective in the study of AI and language.

METHOD

Types and Approaches of Research

This research uses a qualitative approach with descriptive qualitative methods. The qualitative approach was chosen because this study aims to deeply understand the implementation process of regional language AI chatbots and their significance in local cross-cultural communication from the perspective of users and stakeholders. Qualitative research allows researchers to explore social realities holistically, contextually, and naturally without manipulating the research object (Moleong, 2018).

Qualitative descriptive methods are used to systematically and factually describe the phenomenon of regional language AI chatbot use in the context of local cross-cultural communication, including interaction patterns, user perceptions, and challenges faced (Sugiyono, 2019).

Research Location and Subjects

This research was conducted in a local community that uses regional languages in their daily lives and has interacted with regional language AI chatbots. The research subjects included:

1. Developers or managers of regional language AI chatbots,
2. AI chatbot users from diverse local cultural backgrounds,
3. Community leaders or individuals who understand local cultural values and norms.

The selection of these research subjects was based on the informants' direct involvement in the implementation and use of AI chatbots as a means of cross-cultural communication.

Informant determination technique

The informant selection technique in this study used purposive sampling, which involves deliberately selecting informants based on specific criteria aligned with the research objectives. Informants were chosen because they were deemed to possess in-depth knowledge, experience, and understanding of the use of regional language AI chatbots in cross-cultural communication (Creswell, 2014).

Data collection technique

The data collection techniques used in this study were conducted through several methods, namely:

1. In-depth Interviews

   In-depth interviews were used to explore the informants' views, experiences, and perceptions regarding the implementation of regional language AI chatbots in local cross-cultural communication. This technique enabled researchers to obtain rich and in-depth data related to the meanings informants construct in their interactions with the AI chatbot (Kvale & Brinkmann, 2015).

2. Observations

   Observations were conducted to directly observe interaction patterns between users and the AI chatbot, including the use of regional language, the chatbot's responses, and the accompanying cultural context. Observations helped researchers understand communication practices that actually occur in the field (Spradley, 2016).

Data analysis techniques

Data analysis in this study was conducted interactively and continuously, following the qualitative data analysis model proposed by Miles, Huberman, and Saldaña (2014), which includes:

1. Data reduction
   The process of selecting, focusing, and simplifying raw data according to the research focus;
2. Data presentation
   Organizing data into descriptive narratives or research themes for easy understanding;
3. Conclusion drawing and verification
   The process of interpreting the meaning of the data to discover patterns, relationships, and implications for implementing regional-language AI chatbots in local cross-cultural communication.

Data validity techniques

The validity of the data in this study was maintained through several techniques, including:

1. Source triangulation, by comparing data obtained from various informants,
2. Technical triangulation, by comparing the results of interviews, observations, and documentation,
3. Member checking, which involves reconfirming the research findings with informants to ensure data consistency (Sugiyono, 2019).

FINDINGS AND DISCUSSION

Findings

This research focuses on the implementation of an Artificial Intelligence (AI)-based chatbot that uses regional languages as a medium of communication with local communities. This chatbot is used to convey information and interact with users from diverse local cultural backgrounds. Regional languages were chosen as the chatbot's primary language to foster close communication and minimize the cultural distance between the technology and users.

Based on observations, this chatbot utilizes Natural Language Processing (NLP) technology to understand user questions and provide responses in simplified regional languages that are understandable to various community groups.

Discussion

The research results show that the implementation of regional language AI chatbots focuses not only on the technical aspects of system development but also on adapting to the local language and cultural context. The chatbots are designed with vocabulary, expressions, and language styles familiar to the local community. This aligns with the view of Russell and Norvig (2021), who stated that effective AI must be able to adapt to the user's context.

Based on observations, interactions between users and chatbots demonstrate relatively natural communication patterns. Users tend to feel more comfortable and open when the chatbot

uses the regional language compared to the national or foreign language. The use of regional languages creates a sense of closeness and familiarity, thereby strengthening user engagement in communication.

These findings support Kramsch's (1998) theory that language represents the identity and culture of a community. In this context, chatbots function not only as technological tools but also as a medium for representing local cultural identity. The interactions that occur reflect the process of technology adapting to the community's cultural values and norms.

In the context of local cross-cultural communication, regional language AI chatbots serve as communication mediators between users from different cultural backgrounds. The regional languages used by the chatbots are designed to be general and inclusive.

Interview results indicate that regional language AI chatbots act as mediators in local cross-cultural communication. Users from different subcultural backgrounds or dialects can still understand the chatbot's messages because the system is designed using a general and inclusive regional language.

This role aligns with the concept of cross-cultural communication proposed by Gudykunst and Kim (2003), which states that successful intercultural communication is influenced by the ability to adapt messages to the recipient's cultural background. The AI chatbot in this study functions as a message adapter, helping to reduce potential misunderstandings due to cultural and linguistic differences.

Despite its significant role, this study also identified several challenges in implementing regional language AI chatbots. The main challenge lies in the diversity of dialects and the contextual meaning of regional languages. Chatbots are not yet fully capable of understanding highly specific dialect variations or symbolic cultural expressions.

Furthermore, limited regional language data hinders the training process of the AI system, impacting the accuracy of the chatbot's responses in certain situations. These findings suggest that implementing regional language AI chatbots requires continuous data updates and the active involvement of local communities to ensure the system's continued adaptation to cultural dynamics.

Based on the research results, it can be concluded that the implementation of regional language AI chatbots represents a form of integration between AI technology and local cross-cultural communication. AI and NLP enable the chatbot to understand regional languages, while a cultural approach ensures that the messages conveyed align with societal values and norms.

These research findings reinforce the theory of Adamopoulou and Moussiades (2020), which states that chatbots function as effective interactive communication media when they adapt to the user's context. Furthermore, the use of regional languages has been shown to increase the effectiveness of local cross-cultural communication by fostering a sense of closeness, trust, and understanding between individuals.

Thus, regional language AI chatbots serve not only as a technological innovation but also as a means of preserving local languages and cultures in the digital age.

CONCLUSION AND SUGGESTION

Conclusion

Based on the research results and discussions regarding the implementation of regional language AI chatbots for cross-cultural communication, the following conclusions can be drawn:

1. Implementing regional language AI chatbots encompasses not only the technical aspects of system development but also involves understanding the social and cultural context of the local community. The use of Artificial Intelligence technology, particularly Natural Language Processing, enables chatbots to understand and respond to regional languages more naturally and contextually.
2. The use of regional languages in chatbots has been shown to increase the comfort and intimacy of communication between users and the system. Regional languages serve as a representation of cultural identity, building trust and user engagement, resulting in more effective interactions than using formal or national languages.
3. Regional language AI chatbots serve as mediators for local cross-cultural communication. By using inclusive and neutral regional languages, chatbots can bridge differences in subcultures, dialects, and social backgrounds, reducing the potential for misunderstandings in the communication process.
4. Despite providing significant benefits, the implementation of regional language AI chatbots still faces several challenges, particularly related to dialect diversity, the contextual meaning of language, and limited regional language data. These challenges impact the accuracy of chatbot responses and highlight the need for sustainable, community-based system development.
5. Overall, this research demonstrates that regional language AI chatbots serve not only as a technological innovation but also as a communication tool that supports the preservation of local languages and cultures and strengthens cross-cultural communication practices at the local level.

Suggestion

Based on the research results and discussions regarding the implementation of regional language AI chatbots for cross-cultural communication, the following conclusions can be drawn:

1. Implementing regional language AI chatbots encompasses not only the technical aspects of system development but also involves understanding the social and cultural context of the local community. The use of Artificial Intelligence technology, particularly Natural Language Processing, enables chatbots to understand and respond to regional languages more naturally and contextually.
2. The use of regional languages in chatbots has been shown to increase the comfort and intimacy of communication between users and the system. Regional languages serve as a representation of cultural identity, building trust and user engagement, resulting in more effective interactions than using formal or national languages.
3. Regional language AI chatbots serve as mediators for local cross-cultural communication. By using inclusive and neutral regional languages, chatbots can bridge

differences in subcultures, dialects, and social backgrounds, reducing the potential for misunderstandings in the communication process.

4. Despite providing significant benefits, the implementation of regional language AI chatbots still faces several challenges, particularly related to dialect diversity, the contextual meaning of language, and limited regional language data. These challenges impact the accuracy of chatbot responses and highlight the need for sustainable, community-based system development.
5. Overall, this research demonstrates that regional language AI chatbots serve not only as a technological innovation but also as a communication tool that supports the preservation of local languages and cultures and strengthens cross-cultural communication practices at the local level.

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