



DEVELOPMENT OF SNAKE-AND-LADDER AND LITERARY MONOPOLY LEARNING MEDIA BASED ON THE KUTAI MALAY LANGUAGE TO ENHANCE LINGUISTIC LITERACY OF STUDENTS WITH DISABILITIES

Vidia Fatmawati¹, Wahyu Widyatmoko²

^{1,2}Universitas Mulawarman, Indonesia

Article Info

Keywords:

Educational Games,
Kutai Malay,
Learning Media,
Regional Language,
Students with Disabilities

ABSTRACT

The preservation of regional languages faces serious challenges in the era of modernization, particularly for students with disabilities, who are still rarely the focus of regional language revitalization programs. This study aims to develop educational game-based learning media in the form of Snake and Ladder and Literary Monopoly games and to examine their effectiveness in improving the linguistic literacy of students with disabilities. The study employs a Research and Development (R&D) approach, encompassing stages of media design, limited implementation, and evaluation of learning outcomes. The research subjects were 11 junior high school-level students from a Special School (Sekolah Luar Biasa/SLB) in Samarinda City. Data were collected through observation, pre-tests and post-tests, and activity documentation. The results indicate an improvement in students' understanding of Kutai Malay vocabulary and culture following the use of the learning media. The Snake and Ladder and Literary Monopoly media were found to be adaptive, engaging, and effective as linguistic learning tools for students with disabilities. This study recommends further development of game-based learning media as an inclusive strategy for regional language revitalization.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Vidia Fatmawati
Program Studi Bimbingan dan Konseling
Universitas ulawarman, Indonesia
vidiafatmawati09@gmail.com

1. INTRODUCTION

Regional languages constitute a fundamental part of intangible cultural heritage and play a vital role in shaping the social, cultural, and historical identity of a community. The existence of regional languages functions not only as a means of communication but also as a medium for transmitting values, local knowledge, and collective memory across generations [1], [2], [3]. However, in the context of globalization and modernization, many regional languages face serious threats, including a decline in the number of speakers, functional shifts, and even extinction. Currently, more than 7,000 languages are spoken worldwide. Rapid globalization and language suppression have resulted in nearly 40% of the world's living languages being classified as "endangered" at various levels. If current patterns are not slowed or reversed, linguists estimate that up to 90% of the world's languages could disappear within the next century [4]. This phenomenon places regional language revitalization as a crucial issue in contemporary cultural and social studies.

Indonesia as a multilingual country has more than 718 regional languages spread across various regions. The Constitution explicitly mandates the respect for and preservation of regional languages as part of the nation's cultural wealth. In reality, based on 2019 data, out of the 718 regional languages in Indonesia, 11 languages have become extinct and 24 languages have experienced a decline in the number of speakers [5]. The dominance of Indonesian as the national language, combined with the influence of foreign languages and global popular culture, has further accelerated language shift. In the long term, this condition has the potential to weaken the sustainability of regional languages as markers of local cultural identity [6], [7].

One of the regional languages experiencing such conditions is Kutai Malay in East Kalimantan Province. Historically, this language has played an important role in the social and cultural life of the Kutai community [6], [8]. Regionally, the Kutai ethnic group constitutes only about 2.01% of the population in Kalimantan. Recognizing this situation, the government, through the Agency for Language Development and Fostering, has designated Kutai Malay as one of the regional languages targeted for revitalization programs. These programs aim to enhance language vitality through various educational and cultural strategies [9].

Nevertheless, the implementation of regional language revitalization still faces various challenges, one of which is the limited scope of target groups. Most revitalization activities continue to focus on regular students, while vulnerable groups such as students with disabilities receive relatively little attention. In fact, persons with disabilities have equal rights to access language and cultural education, including regional languages as part of their cultural identity. From the perspective of social justice and inclusivity, neglecting people with disabilities in regional language preservation programs may widen cultural and social disparities.

Regional language learning for students with disabilities has characteristics and needs that differ from those of non-disabled students. Physical and intellectual limitations require learning approaches that are adaptive, contextual, and multisensory in nature. Conventional learning methods that rely heavily on lectures and text are often less effective for students with disabilities due to minimal visual stimulation and limited direct interaction. Therefore, innovative learning media are needed to bridge these limitations while simultaneously enhancing students' motivation and participation in learning.

Numerous studies indicate that educational games can increase learning engagement, conceptual understanding, and language skills among students, including those with special needs. Game-based learning media are viewed as a promising alternative for inclusive education [10]. Educational games allow students to learn through direct experience in engaging and enjoyable activities [11]. In the context of language and cultural learning, games function not only as tools for knowledge transfer but also as media for internalizing cultural values and shaping identity [12]. However, the development of educational game media that are specifically based on regional languages and designed for students with disabilities remains relatively limited. Many learning media used in inclusive education have not yet integrated local language and cultural elements. This condition indicates a gap between the needs of inclusive learning, efforts to revitalize regional languages, and the availability of appropriate learning media.

The novelty of this study focuses on the development of learning media in the form of Snake and Ladder and Literary Monopoly games based on the Kutai Malay language. These media are designed as educational games that integrate basic vocabulary, everyday expressions, and Kutai cultural knowledge in visual and interactive formats. The selection of snake and ladder and monopoly games is based on their familiar, flexible, and easily modifiable characteristics to suit the needs of students with disabilities. In addition, these games facilitate social interaction, cooperation, and communication among participants.

This study positions learning media not only as pedagogical tools but also as instruments for inclusive regional language revitalization. Through the development and implementation of educational game media based on the Kutai Malay language, this research seeks to address two main issues: the limited availability of regional language learning media for students with disabilities and the low level of Kutai Malay linguistic literacy among this group. Accordingly, this study offers dual contributions, both to the field of inclusive education and to efforts aimed at preserving local language and culture.

Specifically, the objectives of this study are to develop Snake and Ladder and Literary Monopoly media based on the Kutai Malay language and to analyze their role in improving the linguistic literacy of students with disabilities. Linguistic literacy in this study is understood as the ability to comprehend vocabulary, meanings, and contexts of Kutai Malay usage in a simple and functional manner. The findings of this study are expected to provide theoretical contributions to the development of inclusive regional language learning studies, as well as practical contributions for educators, cultural practitioners, and policymakers in designing more equitable and sustainable regional language revitalization programs.

2. RESEARCH METHODS

Research Design

This study employs a Research and Development (R&D) approach with an applicative-contextual orientation aimed at producing learning media while simultaneously examining its role in improving the linguistic literacy of students with disabilities. The development model used is simple and adaptive, tailored to the context of inclusive education and the limitations of the research subjects, without proceeding to large-scale trial stages.

In this study, the R&D approach is not interpreted merely as technical product testing, but rather as a systematic process that integrates media development, learning implementation, and evaluation of learning outcomes within a specific social and cultural context, namely the revitalization of the Kutai Malay language.

Research Stages

This research was conducted through four main stages as follows:

a. Analysis Stage

This stage aims to identify problems in regional language learning among students with disabilities as well as the need for appropriate learning media. The analysis was conducted through initial observations at a Special School (Sekolah Luar Biasa/SLB), discussions with accompanying teachers, and a review of regional language revitalization policies. The results indicate that Kutai Malay language learning still lacks adaptive, interactive, and disability-friendly learning media.

b. Design Stage

Based on the results of the needs analysis, learning media in the form of Snake and Ladder and Literary Monopoly games based on the Kutai Malay language were designed. Media design includes the selection of basic vocabulary, simple expressions, and Kutai cultural elements relevant to the level of understanding of students with disabilities. The media were designed by considering visual aspects, colors, sizes, and simple game rules to ensure they are easy to understand and play.

c. Implementation Stage

The developed media were then implemented in Kutai Malay language learning activities for students with disabilities at the SLB. Learning was conducted in a guided manner with the assistance of teachers and researchers, using a learning-through-play approach. At this stage, the media served as the primary learning tool, while the researcher observed students' engagement, responses, and interactions throughout the learning process.

d. Evaluation Stage

The evaluation stage aims to assess the role of the learning media in improving the linguistic literacy of students with disabilities. Evaluation was carried out through the administration of a pre-test and post-test, as well as observations of changes in students' attitudes and participation during learning activities. The evaluation results were used to assess learning outcomes and the initial effectiveness of the developed media.

Research Subjects and Location

The research subjects were 11 junior high school-level students from a Special School (SLB) in Samarinda City, East Kalimantan Province, consisting of students with physical disabilities and mild intellectual disabilities. Subjects were selected purposively based on the suitability of student characteristics with the research objectives, namely regional language learning through educational games.

The research location was chosen because it is situated in a Kutai Malay-speaking area and has a direct connection to regional language revitalization programs currently implemented by local government and related institutions.

Data Collection Techniques

Research data were collected using the following techniques:

a. Linguistic Tests

Tests were used to measure students' linguistic literacy before and after the use of the learning media. The tests covered understanding of basic vocabulary, cultural terms, and simple usage of the Kutai Malay language.

b. Observation

Observations were conducted during the learning process to record students' engagement, responses to the game-based media, and patterns of social interaction that emerged during the activities.

c. Documentation

Documentation included photographs of activities, field notes, and archives of the learning media used as supporting research data.

Data Analysis Techniques

Data were analyzed using descriptive quantitative and qualitative approaches. Test data were analyzed by comparing pre-test and post-test results to identify trends in the improvement of students' linguistic literacy. Meanwhile, observation and documentation data were analyzed descriptively and qualitatively to illustrate the learning process, student engagement, and the role of learning media within the context of inclusive education. This analytical approach was chosen to provide a comprehensive picture of the impact of learning media use, both in terms of linguistic achievement and social and cultural aspects.

Research Ethics

This research was conducted in accordance with research ethics principles, particularly those related to participants with disabilities. All activities were carried out with the consent of the school and accompanying staff, while upholding the principles of non-discrimination, comfort, and the safety of students throughout the research process.

3. RESULT AND ANALYSIS

Results

Development of Kutai Malay Language Learning Media.



Figure 1. Traditional Snake and Ladder Game

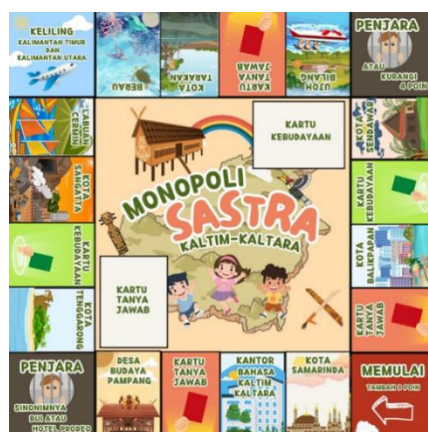


Figure 2. Traditional Monopoly Game

Figures 1 and 2 illustrate the results of the development of learning media in the form of Snake and Ladder and Literary Monopoly games based on the Kutai Malay language, which were adaptively designed for students with disabilities. These media incorporate basic vocabulary, everyday expressions, and Kutai cultural knowledge presented through visuals, symbols, and simple questions. The media design emphasizes visual clarity, contrasting colors, sufficiently large game boards, and simplified game rules to ensure ease of understanding for students with physical disabilities and mild intellectual disabilities. The developed media were used as the primary tools in Kutai Malay language learning through a learning-by-playing approach. During implementation, the games were conducted in groups with guidance from teachers and researchers to ensure the active involvement of all students.

Results of Linguistic Literacy Tests of Students with Disabilities

To measure the improvement in the linguistic literacy of students with disabilities, a pre-test was administered before the use of the learning media and a post-test was conducted after the completion of the entire learning sequence. The test covered understanding of Kutai Malay vocabulary, recognition of cultural terms, and the ability to answer simple questions related to language use in everyday contexts.

Table 1. Pre-test and Post-test Results of Linguistic Literacy of Students with Disabilities

No	Student Code	Student Code	Student Code
1	S1	35	83
2	S2	40	83
3	S3	38	75
4	S4	42	67
5	S5	30	58
6	S6	28	50
7	S7	45	100
8	S8	33	83
9	S9	30	58
10	S10	40	83
11	S11	35	83

Based on Table 1, the pre-test results indicate that the initial linguistic literacy abilities of students with disabilities were in the low to moderate category, with scores ranging from 28 to 45. These scores reflect students' limited understanding of basic vocabulary and cultural elements of the Kutai Malay language prior to the learning intervention.

Following the implementation of the Kutai Malay-based Snake and Ladder and Literary Monopoly media, all students who completed the tests showed an increase in their post-test scores. Post-test scores ranged from 50 to 100, with individual score improvements between 22 and 55 points. These findings demonstrate a clear trend of improved linguistic literacy among students with disabilities after learning through educational game-based media.

Table 2. Paired Sample T-Test Results

Paired Samples Correlations	N	Correlation	Sig.
Pair 1 Pretest & Posttest	11	.743	.009

Table 2 shows a strong and statistically significant positive correlation between pre-test and post-test scores ($r = 0.743$; $p = 0.009$). This finding indicates that changes in students' linguistic literacy scores after the use of traditional snake and ladder and monopoly games reflect a meaningful relationship between initial ability levels and learning outcomes following the instructional intervention.

Results of Observations on Student Engagement and Responses

The observation results during the learning process indicate that the use of educational game-based media had a positive impact on the engagement and participation of students with disabilities. Students appeared more enthusiastic, actively asked questions, and were involved in interactions throughout the gameplay. The play-based activities encouraged students to communicate, collaborate, and confidently attempt to use Kutai Malay vocabulary within the context of the games.

The Snake and Ladder and Literary Monopoly media also helped reduce the tendency toward passivity that often emerges in conventional learning settings. Students who had previously been less responsive to language learning showed increased interest when the material was presented through games. In addition, the visual and interactive approach enabled students to understand the material without excessive academic pressure



Figure 3. Guided Play Using Snake and Ladder and Literary Monopoly Games

Discussion

Based on the research findings, the use of educational game-based media demonstrates a clear tendency to improve students' linguistic literacy, as evidenced by both quantitative test results and observations of student engagement during the learning process. These findings confirm that game-based learning media can serve as a relevant and effective approach within the contexts of inclusive education and regional language revitalization.

The results show that all students who participated in learning through traditional snake and ladder and monopoly games experienced an increase in post-test scores compared to their pre-test scores. This finding is consistent with game-based learning theory, which posits that learning through games creates a more meaningful, enjoyable, and learner-centered environment. Games enable students to learn through direct experience (learning by doing), allowing linguistic concepts to be internalized naturally without excessive academic pressure [13].

In the context of students with disabilities, educational game media play an important role in reducing cognitive and affective barriers that often arise in language learning. Visual approaches, simplified game rules, and social interaction during gameplay help students gradually understand Kutai Malay vocabulary and expressions. This aligns with multisensory learning theory, which emphasizes the importance of visual and kinesthetic stimulation in learning for students with special needs.

The findings of this study reinforce previous research indicating that educational games can enhance student motivation and learning outcomes, particularly in language subjects [14], [15], [16], [17]. Another study have shown that game-based media such as board games are effective in improving vocabulary mastery, reading skills, and student engagement in language learning [18].

From the perspective of language revitalization theory, regional language learning through educational game-based media can be understood as a form of informal and participatory language transmission [19]. Language maintenance theory emphasizes that the sustainability of regional languages is largely determined by their use in everyday life and in meaningful social spaces. Game-based media allow the Kutai Malay language to be used in enjoyable social interaction contexts, thereby increasing the likelihood that the language will be learned and internalized by younger generations, including students with disabilities.

The findings also show that students not only learned vocabulary but were also introduced to Kutai cultural elements embedded in the games. This supports the view that language and culture are inseparable entities [20]. Accordingly, the learning media developed in this study contribute not only to the enhancement of linguistic literacy but also function as a means of introducing local cultural identity in an inclusive manner.

Theoretically, this study contributes to the development of game-based learning research by presenting the context of regional language learning and involving students with disabilities as research subjects. The findings indicate that educational games are not only relevant for improving academic achievement but can also serve as tools for language revitalization and cultural identity reinforcement. Moreover, this study expands the discourse on inclusive education by positioning regional languages as an integral part of an inclusive curriculum, rather than as marginal or supplementary content.

In conclusion, the results of this study support the view that integrating pedagogical approaches, cultural perspectives, and principles of inclusivity can produce a more holistic and equitable learning model. The Kutai Malay-based Snake and Ladder and Literary Monopoly media can be regarded as an example of best practice in developing learning media that are sensitive to social and cultural contexts as well as to the diverse needs of learners.

4. CONCLUSION

This study concludes that the development of Kutai Malay-based Snake and Ladder and Literary Monopoly media have the potential to enhance the linguistic literacy of students with disabilities and to create more inclusive and participatory regional language learning. Based on the results and discussion, the educational game-based media were shown to encourage active student engagement, strengthen understanding of vocabulary and local cultural elements, and provide opportunities for students with disabilities to participate in the process of regional language revitalization. Looking ahead, the findings of this study have strong prospects for further development through the application of the media at broader educational levels and across a wider range of disabilities, enrichment with additional local cultural content, and integration with digital media or culture-based curricula. Further research is also needed to examine the effectiveness of the media more extensively and in greater depth, either through more comprehensive experimental designs or through interdisciplinary approaches that connect education, culture, and inclusive policy.

5. REFERENCES

- [1] K. R. Harefa and K. H. Harefa, "Peran bahasa dalam pembentukan identitas budaya di Indonesia," *J. Ilmu Ekon. Pendidik. dan Tek.*, vol. 1, no. 3, pp. 102-107, 2024, [Online]. Available: <https://doi.org/10.70134/identik.v2i4.150>
- [2] J. Xu, C. Zhou, and H. Liu, "Cultural heritage as a key motivation for sustainable language protection: a case study of the Suzhou dialect protection project," *J. Multiling. Multicult. Dev.*, vol. 46, no. 9, pp. 2930-2947, Oct. 2025, doi: 10.1080/01434632.2024.2317351.
- [3] Y. A. Ajani, B. D. Oladokun, S. A. Olarongbe, M. N. Amaechi, N. Rabi, and M. T. Bashorun, "Revitalizing Indigenous Knowledge Systems via Digital Media Technologies for Sustainability of Indigenous Languages," vol. 53, no. 1, pp. 35-44, 2024, doi: doi:10.1515/pdte-2023-0051.
- [4] Z. Qiblawi, "5 Major Languages That Face Extinction," *World Atlas Language*. [Online]. Available: <https://www.worldatlas.com/history/5-major-languages-that-face-extinction.html>
- [5] S. Yohantho, "Masa Depan Bahasa Daerah," *Badan Pengembangan dan Pembinaan Bahasa*. [Online]. Available: <https://badanbahasa.kemendikdasmen.go.id/artikel-detail/4540/masa-depan-bahasa-daerah>
- [6] N. N. Insani and M. R. Ridha, "Ancaman Pergeseran Bahasa Daerah Dan Dampaknya Terhadap Keberlanjutan Warisan Budaya Di Era Global," *Menulis J. Penelit. Nusantara*, vol. 1, no. 5, pp. 91-96, 2025, [Online]. Available: <https://doi.org/10.59435/menulis.v1i5.236>
- [7] I. Siregar, "Effective and Efficient Treatment of Regional Language Preservation Strategies in the Nusantara," *J. Humanit. Soc. Sci. Stud.*, vol. 4, no. 2, pp. 16-22, 2022, doi: 10.32996/jhss.2022.4.2.3.
- [8] A. F. Lauder, M. R. M. T. Lauder, and K. Kiftiawati, "Preserving and empowering local languages amidst the Covid-19 pandemic; Lessons from East Kalimantan," *Wacana, J. Humanit. Indones.*, vol. 22, no. 2, p. 8, 2021, [Online]. Available: <https://scholarhub.ui.ac.id/context/wacana/article/1143/viewcontent/uc.pdf>
- [9] Media Kaltim, "Terancam Punah, Bahasa Kutai Kembali Masuk Pelajaran Muatan Lokal," *Media Kaltim*. [Online]. Available: <https://mediakaltim.com/terancam-punah-bahasa-kutai-kembali-masuk-pelajaran-muatan-lokal/>
- [10] F. R. Sutarta, A. Widiatsih, and I. H. Zusfindhana, "Efektivitas Teknologi Game Sebagai Media Pembelajaran dan Edukasi Bagi Anak Tunagrahita Ringan," *SPEED J. J. Spec. Educ.*, vol. 7, no. 1, pp. 26-41, 2023, [Online]. Available: <https://doi.org/10.31537/speed.v7i1.1190>
- [11] A. Thariq, D. M. Tangke, D. Andriany, and C. M. Leleury, "Penerapan Media Pembelajaran Interaktif Bagi Anak Disabilitas di SLB Negeri Kota Ambon," *Abdimas Papua J. Community Serv.*, vol. 6, no. 1, pp. 25-30, 2024, [Online]. Available: <https://doi.org/10.33506/pjcs.v6i1.2899>
- [12] A. P. Aji and F. Y. Al Irsyad, "Game Edukasi Pengenalan Budaya-Budaya Indonesia Berupa Baju Adat dan Makanan Khas Daerah Pada Anak Tunagrahita Di SLB BC Mitra Amanda Banyudono," 2021, Universitas Muhammadiyah Surakarta. [Online]. Available: <https://eprints.ums.ac.id/88585/>
- [13] H. Li and M. Zhang, "Museum game-based learning: innovative approaches from a constructivist perspective," *Front. Educ.*, vol. Volume 10-2025, 2025, [Online]. Available: <https://www.frontiersin.org/journals/education/articles/10.3389/educ.2025.1576207>
- [14] M. Nadeem, M. Oroszlanyova, and W. Farag, "Effect of Digital Game-Based Learning on Student Engagement and Motivation," 2023. doi: 10.3390/computers12090177.
- [15] M. D. E. Tambusay, "Innovation of regional language learning media based on gamification for the revitalization of the Batak Toba language," *Int. J. Linguist. Sumatra Malay*, vol. 4, no. 1, pp. 38-50, 2025, [Online]. Available: <https://doi.org/10.32734/ijslm.v4i1.20901>
- [16] C.-H. Wu, Y.-L. Chao, J.-T. Xiong, and D.-B. Luh, "Gamification of Culture: A Strategy for Cultural Preservation and Local Sustainable Development," 2023. doi: 10.3390/su15010650.
- [17] K. Ishaq, F. Rosdi, N. A. M. Zin, and A. Abid, "Serious game design model for language learning in the cultural context," *Educ. Inf. Technol.*, vol. 27, no. 7, pp. 9317-9355, 2022, doi: 10.1007/s10639-022-10999-5.
- [18] A. A. Ahmed et al., "Investigating the Effect of Using Game-Based Learning on EFL Learners' Motivation and Anxiety," *Educ. Res. Int.*, vol. 2022, no. 1, p. 6503139, Jan. 2022, doi: <https://doi.org/10.1155/2022/6503139>
- [19] R. Xu, Q. Wu, W. Wang, M. Shidujaman, and M. Wei, "Revitalize Qiang Language and Culture by Designing Serious Games Based on Interactive Projection BT - Human-Computer Interaction. User Experience and Behavior," M. Kurosu, Ed., Cham: Springer International Publishing, 2022, pp. 243-261.
- [20] N. Manić, "Translation as a form of language activism: an ecolinguistic perspective," *Lang. Sci.*, vol. 113, p. 101770, 2026, doi: <https://doi.org/10.1016/j.langsci.2025.101770>