

Strengthening students' literacy, numeracy and character by traditional Angkola games revitalization

¹Gabby Maureen Pricilia*, ¹Habib Rahmansyah, ¹Ayustina Julia, ¹Sahrul Batubara, ¹Okta Amalia, ¹Dimas Eri Sujiwo, ¹Salsa Dillah Tijahra, ¹Nurhusainah, ¹Mutiara Harahap, ¹Lidya Reski Minta Ito

¹English Education, Faculty of Social Science and Language Education, Institut Pendidikan Tapanuli Selatan, Padangsidempuan, Indonesia

*Corresponding Author

Jl. Sutan Muhammad Arif, Kelurahan Batang Ayumi Jae, Kec. Padangsidempuan Utara, Kota

Padangsidempuan, Sumatera Utara 22733, Telp. 081326284232

E-mail: gabbymaureen9@gmail.com

How to cite (APA 7th style): Pricilia, G.M., Rahmansyah, H., Julia, A., Batubara, S., Amalia, O., Sujiwo, D.E., Tijarah, S.D., Nurhusainah, N., Harahap, M., & Ito, L.R.M. (2026). Strengthening students' literacy, numeracy and character by traditional Angkola games revitalization. *Community Empowerment Journal*, 4(2), 375-381. <https://doi.org/10.61251/cej.v4i2.405>

Abstract

Literacy, numeracy, and character are important foundations for life skills in the 21st century and the indicators of a nation's progress, so they must receive serious attention. The partners in this activity are children in Rimba Soping Village who show low literacy, numeracy skills and need character strengthening. Strengthening children's literacy, numeracy and character is done by implementing community service in revitalizing Angkola traditional games program for students in Rimba Soping Village. Traditional Angkola games such as marsimbak, markuling-kuling acca, markalas-kalas, marjambatan Tapanuli, adong ma sada carito stimulate children to build communication each other, tell what they think, count and so on which are basic literacy and numeracy skills that are needed. And through these traditional games, the characters of cooperation, honesty, love of culture, friendship, communicative, caring, discipline, orderly are instilled and strengthened. With this, children's literacy, numeracy and character experience positive changes while preserving traditional Angkola games.

Keywords: literacy; numeracy; character; traditional Angkola games

INTRODUCTION

In education, numeracy and literacy remain significant challenges, particularly in remote and underdeveloped regions. This issue is far from trivial because literacy and numeracy competencies are essential for developing a knowledgeable society and fostering national competitiveness in the 21st century. Recent studies indicate that many elementary school students still demonstrate low numeracy literacy skills and encounter difficulties in applying mathematical reasoning to real-life situations (Anggraeni, 2024; Yuda & Rosmilawati, 2024). Furthermore, literacy and numeracy are closely linked to students' critical thinking, self-regulated learning, and overall academic achievement (Herawati et al., 2024). Therefore, strengthening these competencies has become a major priority in educational development.

Likewise, students' character development is equally important because it contributes to the formation of responsible citizens and reflects the character of the nation itself. Character

education should be nurtured collaboratively through schools, families, and communities. However, concerns regarding the decline of children's character values have become increasingly prominent. Many elementary school students demonstrate difficulties in cooperation, honesty, respect, politeness, and appreciation of local cultural heritage. In response, scholars emphasize that literacy and numeracy education should be integrated with character education to cultivate not only cognitive competence but also positive values and behaviors among learners (Tanjung, 2024). Moreover, preserving traditional games and local cultural practices can support both character formation and cultural identity among young learners.

Numeracy literacy includes a person's ability to use reasoning (Ekowati et al., 2019). Reasoning is the ability to analyze and understand a statement by manipulating mathematical symbols or language that exists in everyday life and expressing the statement orally or in writing. Furthermore, numeracy literacy is the knowledge and skills of (a) using numbers and symbols related to mathematics in solving everyday problems; and (b) analyzing the information presented to make decisions (Ayuningtias & Syukriah, 2020).

Literacy is not merely the ability to read, write, and reason, rather, it encompasses a broad range of competencies that continue to develop throughout an individual's life. In the 21st century, literacy includes critical thinking, problem-solving, communication, and the ability to use information effectively in various contexts. Similarly, numeracy is recognized as a fundamental competency that contributes significantly to individual well-being and national development. According to UNESCO (2024), numeracy is essential for active participation in society and sustainable economic growth. Numeracy differs from mathematics in that it involves not only mathematical knowledge but also the capacity to apply mathematical concepts, skills, and reasoning to solve real-world problems and make informed decisions in diverse situations. Therefore, numeracy requires the integration of knowledge, skills, attitudes, and behaviors necessary for effective engagement with quantitative information in everyday life (OECD, 2023).

The problem is students' literacy, numeracy and character. Students are still have difficulty in literacy and numeracy. The implementation of the Reviving Angkola Traditional Games Program, which has begun to fade in this gadget era as an effort to strengthen students' literacy, numeracy and character in Rimba Soping. Traditional games are a medium that can strengthen students' literacy, numeracy and character. Then, traditional games help children learn to cooperate, be independent, care, respect, and manage emotions and empathy (Nur, et.al., 2017).

Students are the future generation who must be equipped with essential competencies to thrive in the 21st century. In today's rapidly changing world, learners are expected to develop critical thinking, collaboration, communication, and creativity skills, which are widely recognized as core 21st-century competencies. Achieving these skills requires strong foundations in literacy and numeracy, as well as the development of positive character values such as respect, responsibility, and cooperation. Therefore, education should not only focus on academic achievement but also foster character development to prepare students for lifelong learning and active participation in society (OECD, 2023).

METHOD

As part of Strengthening Literacy, Numeracy, and Children's Character in Rimba Soping Village, which was mentioned earlier, the main objective of this service activity is to improve children's literacy and numeracy skills through Reviving Angkola Traditional Games Program. This activity is based on the real conditions of the partners. Furthermore, the steps of this activity are divided into several stages, namely: 1) Preparation, 2) Implementation and 3) Evaluation. In details, preparation stage is the proposing team conducted a location review and initial observations in the field to find out the conditions and problems faced by partners directly. Assessment stage is

the proposing team identifies the problems and solutions needed by the partners. Then collected data and analyzed information about literacy, numeracy, and character problems to design solutions.

Program implementation stage is the process provides solutions to partners' problems and actively engages partners. To improve the numeracy intelligence, literacy, and character of students in Rimba Soping, the Revitalization of Angkola Traditional Games program will be the solution. In this stage, the Community Service team will introduce numeracy literacy. In the second step, the PkM team will directly demonstrate traditional Angkola games such as *kuling-kuling acca*, *marjambatan Tapanuli*, *markalas-kalas*, *marsimbak* and *adong ma sada carito* for four weeks. Then, evaluation and monitoring phase are carried out to check the success of the activities in accordance with the targets that have been set using tests and observations of children's character.

FINDING AND DISCUSSION

The literacy program by using traditional games are Kuling-kuling acca, Jambatan Tapanuli and marcarito. The numeracy program by using traditional games are Marsimbak and Markalas-kalas. The beginning of the activity began with ice breaking led by the implementing lecturer and assisted by the students involved. The ice breaking used is "Hands above Reaching for the Stars" to instill religious character in children, namely cultivating prayer before starting the activity.

Marsimbak

Numeracy reinforcement activities are carried out through the first traditional Angkola game, marsimbak. Marsimbak is a traditional Angkola game using 5 small stones played by throwing them up and then catching them sequentially from symbols 1,2,3,4 to 5 played by one player. Before marsimbak, the children are divided into two groups of 12 children in one group taken from the suit system. The children play a game of pis/suten to choose their group mates. Once the group mates are chosen, the march begins.



Figure 1. Marpis/marsuten to get friends in a team



Figure 2. Marsimbak

The children were so excited and the game practiced their patience in following the rules. Many of them don't understand the marsimbak game but team demonstrated how to play that game, then they tried to play, finally they could do.

Marjambatan Tapanuli

Jambatan Tapanuli is a traditional Angkola game suitable for strengthening children's numeracy. It is played by boys and girls, approximately 8 or more children who have been selected by marpis/suten first. Two people raise each other's hands up, like an archway connecting a bridge to a gate. The other children sing in unison, "Jambatan Tapanuli, manyuruk hamu sudena, tartangkup na parpudi," while ducking over the bridge. Ole-ole."



Figure 3. Jambatan Tapanuli game



Figure 4. Students answer Kuling-Kuling Acca

Kuling-kuling acca

Strengthening children's literacy through kuling-kuling acca. Kuling-kuling acca is a word guessing game in the Angkola regional language. Through this game children learn to understand the local language and the meaning conveyed.

Examples of kuling-kuling acca used are:

- "Gattung martangga-tangga"

Answer: Parira

- "Pir gale-gale, aha mai

Answer: Rante

Kuling-kuling acca is suitable for strengthening children's literacy where children's knowledge about the surrounding environment must be able to convey well as well as instilling the character of cooperation in discussing answers, courage and confidence. The children were very enthusiastic and the learning objectives were achieved. It clearly shows that this game can stimulate students' literacy by critical thinking and answering the questions.

Markalas-kalas

In the third week, the next traditional Angkola game played was markalas-kalas. Markalas-kalas is a traditional Angkola game that is suitable for strengthening children's numeracy. How children understand steps one, two and so on. This game is also a very good motor stimulation for child development. This game also sharpens and fosters the character of honesty, thoroughness, order and patience in children.

This game requires a field to play on. Children usually draw a line on the ground before the game starts. Next, the tool used is kapice, which is thrown into the classes or plots that have been made before. Usually, this tool is made of rubber, tin, or ceramic chips. Kapice is also made to look good and not harm the user or other players. The game can also be played alternately by two to five people.



Figure 5. Markalas-kalas arena



Figure 6. Markalas-kalas Game

The markalas-kalas game is suitable for strengthening children's numeracy, making children understand the concept of geometry, namely the ability to distinguish between squares, rectangles and circles. The markalas-kalas game is a traditional game that can train children's numeracy skills. Children can be stimulated by calculating the steps, the boxes and problem-solving skills in this game. At the fourth meeting, the activity carried out was a post-test to measure the extent of the success of the implementation of this service on literacy, numeracy and children's character. They were given test about literacy and numeracy, and the score were improved. Then the character observation showed enchancement than before.

The results obtained are 80% of children get a score of 100 in literacy questions and 80% get a score of 100 in numeracy questions. This means that children's literacy and numeracy skills have improved. Children's character also experienced positive changes. Of the 10 character indicators observed, namely honesty, orderliness, patience, religion, cooperation, conscientiousness, discipline, courage and friendliness. There were 7 aspects of character from Not Seen to Cultivated during the four weeks of meetings.

At the last meeting, the community service team gave rewards to children who successfully answered questions related to activities for four weeks. The children were very enthusiastic about answering questions and receiving prizes. The team also gave souvenirs to everyone as a memento for the children. This service activity is very memorable and hopefully useful.

From the results of the service obtained, it appears that the children are very enthusiastic. Every week the arrival of team is highly appreciated by them. From these activities, children's social skills also develop well. As this activity is to revive traditional Angkola games to strengthen literacy, numeracy and character of children in Rimba Soping Village. Traditional games, which are rich in local wisdom, sharpen children's gross motor and sensory skills and can also be a platform for character education from an early age in children.

This shows that traditional games can help children become better at socializing, being brave, confident and following rules. This conclusion is in line with the idea (Rut, et.a., 2020) that traditional games can improve children's social skills. The contribution of character

development in traditional Angkola games is evident in the above explanation. Traditional games can benefit children, in addition to making them fun. In addition, the important thing is that traditional games can educate children to be noble characters. This is the reason why it is important that traditional games can do early character building (Husain, 2013).

CONCLUSION

Traditional games are games that can strengthen literacy and numeracy and shape the character of children in Rimba Soping Village. Devotion in Rimba Soping Village shows that the traditional Angkola games contain the value of honesty, patience for each other, orderly following the rules, cooperation, friendship, discipline, courage and confidence because these traditional games can foster children's character values without realizing it. In this modern era, traditional games that are rarely played by children must be revived through revitalizing Angkola traditional games activities in order to strengthen literacy, numeracy and children's character in Rimba Soping Village.

ACKNOWLEDGMENT

The author would like to thank the Chairman of Al-Iman Padangsidempuan Foundation, the Chairman of the Internal Supervisory Unit, the Rector, vice rectors and the dean, the head of LPPM of Institut Pendidikan Tapanuli Selatan, the community service team of lecturers and students, the Head of Rimba Soping Village and the people of Rimba Soping Village.

DAFTAR PUSTAKA

- Anggraeni, D. M. (2024). Keterampilan literasi numerasi siswa sekolah dasar: Studi kasus sekolah dasar daerah 3T. *Media Pendidikan Matematika*, 12(2), 128–140. <https://doi.org/10.33394/mpm.v12i2.13957>
- Ayuningtyas, N., & Sukriyah, D. (2020). Analisis pengetahuan numerasi mahasiswa matematika calon guru. *Matematika dan Pendidikan Matematika*. 9(2): 237– 247 <https://doi.org/10.33387/dpi.v9i2.2299>
- Ekowati, D. W., Astuti, Y. P., Utami, I. W. P., Mukhlisina, I., & Suwandayani, B. I. (2019). Literasi numerasi di SD muhammadiyah. *ELSE (Elementary School Education Journal)*. 3(1): 93 <https://doi.org/10.30651/else.v3i1.2541>
- Herawati, Cahyani, I., & Syafruddin. (2024). Hubungan self-regulated learning dan berpikir kritis dengan kemampuan literasi digital dan literasi numerasi sekolah dasar tahun pelajaran 2024–2025. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 9(4). <https://doi.org/10.23969/jp.v9i04.18604>
- Husain, Setyawan. 2013. Penguatan permainan tradisional dalam membentuk karakter siswa di sd muhammadiyah se-Kecamatan Depok. *Prosiding Seminar Nasional Pendidikan*
- Nur, L., Halimah, M., & Nurzaman, I. (2017). Permainan tradisional kaulinan barudak untuk mengembangkan sikap empati dan pola gerak dasar anak usia dini. *Jurnal PAUD AGAPEDIA*, 1(2):181-189. <https://doi.org/10.17509/jpa.v1i2.9357>
- OECD. (2023). *PISA 2022 Results (Volume I): The State of Learning and Equity in Education*. Paris: OECD Publishing. <https://doi.org/10.1787/53f23881-en>
- Rut, N., Gaol, R. L., Abi, A. R., & Silaban, P. (2020). Pengaruh permainan tradisional terhadap keterampilan sosial anak SD. *Jurnal Educatio FKIP UNMA*, 6(2), 449-455. <https://doi.org/10.31949/educatio.v6i2.568>

Tanjung, B. N. (2024). Actualization of numeracy literacy in character education at elementary school level in the era of disruption. *Indonesian Journal Education*, 3(2). <https://doi.org/10.56495/ije.v3i2.669>

Yuda, E. K., & Rosmilawati, I. (2024). Literasi numerasi di sekolah dasar berdasarkan indikator PISA 2023: Systematic literature review. *Journal of Instructional and Development Researches*, 4(3). <https://doi.org/10.53621/jider.v4i3.326>

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright © 2026 Author(s). This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.