

ETHNOMATHEMATICS-BASED COGNITIVE ASSESSMENT MODEL FOR DYSCALCULIA STUDENTS

Gebby Kusuma Rahayu Putri¹, Kamid², Yelli Ramalisa³

^{1,2,3} Universitas Jambi, Jambi, Indonesia
gebbykusuma06@gmail.com

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Abstract

This research is motivated by the learning difficulties experienced by students with dyscalculia in mathematics, particularly in understanding numerical concepts and performing basic arithmetic operations. This study aims to develop an ethnomathematics-based cognitive assessment model using the traditional congklak game and question cards to assess students' cognitive abilities in learning mathematics. This study uses the Research and Development (R&D) method with the ADDIE model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. The research participants were six seventh-grade students with dyscalculia identified through a screening test. The developed model was tested with content validity and reliability tests. Content validity was validated by two experts, namely a subject matter expert and a media design expert, to evaluate the content and feasibility of the assessment model design. The results showed that the model achieved a validity score of 96.88% from the media expert and 93.75% from the subject matter expert, indicating that the product is valid. Furthermore, the reliability test using Inter-Rater Reliability (ICC) produced a value of 0.892, indicating very high reliability. These findings suggest that an ethnomathematics-based cognitive assessment model can be used as an alternative tool to assess the cognitive abilities of students with dyscalculia in adding and subtracting integers through culturally relevant learning activities.

Keywords: Assessment cognitive; Ethnomathematics; Dyscalculia; Congklak

INTRODUCTION

Learning is a conscious effort made by teachers to actively engage students in the learning process (Murni, 2021). In this case, teachers develop teaching methods with the aim, either intentionally or unintentionally, of improving students' behaviour and mindset (Sa'diyah, 2022). An important part of the learning process is assessment. This assessment is comprehensive and aims to collect data about children, including their abilities, weaknesses, and needs (Sari et al., 2024). One form of assessment used is an assessment of thinking skills. Cognitive assessments are conducted periodically at the beginning of the learning process and also at certain times during the semester (Hakim et al., 2025).

Everyone must have a strong foundation in understanding mathematical concepts (Giriansyah et al., 2023). However, many students still face difficulties in learning mathematics. In fact, a deep understanding of mathematical concepts is crucial for students in their daily lives (Damarasri et al., 2024). This difficulty in learning mathematics is often referred to as dyscalculia (Jalal, 2025). Dyscalculia refers to a condition in which students experience obstacles in performing calculations due to problems in learning and calculating (Novianti, 2021). The basic arithmetic principles referred to include ideas such as adding, subtracting, multiplying, and dividing.

The selection of subjects for this research involved students diagnosed

with dyscalculia. A learning disorder affecting mathematical abilities, at SLBN Prof. Dr. Sri Soedewi Masjchun Sofwan, S.H. located in Jambi City. Observations and interviews conducted within the VII C class revealed that several students were indeed struggling with dyscalculia. During the observational period, it was apparent that the students had difficulties solving mathematical problems, even with simple equations such as $34 + 25 = \dots$. The students were accustomed to relying on their fingers or drawing lines as aids during calculations. Presented with larger numerical value, the students exhibited signs of stress and were prone to giving up easily.

Based on interviews with the seventh grade C teacher, it was found that the information used to determine student learning abilities came from psychological tests and evaluations conducted by the school. However, to ensure that the subjects selected were students with dyscalculia who met the researcher's criteria, a screening test was given to the homeroom teacher. The results showed that the students in class VII C were students with dyscalculia. Students in class VII C were also able to add and subtract two integers with maximum of 50. Therefore, mathematics learning in this class only focused on adding two integers with limit of 50. This condition did not meet the learning standards for phase D students, which should include addition and subtraction of two integers up to a maximum of 100. Thus, learning in this class seemed very slow and did not meet the expected learning achievement standards.

In addition, the learning process in the classroom has not implemented a type of assessment that is capable of measuring students' cognitive aspects, especially those related to the characteristics of students with dyscalculia. The assessments given are mostly in the form of abstract questions. As a result, students with dyscalculia face challenges in understanding the meaning of the

questions given, so that the results of these evaluations do not fully and accurately represent the students' cognitive abilities.

Each individual has a unique approach to solving challenges (Fitria & Siswono, 2014). Students with dyscalculia face problems differently than their peers who do not have this condition. Students with dyscalculia generally experience obstacles when dealing with the problems presented. These obstacles arise due to space of interest and motivation in learning (Nabillah & Abadi, 2019). Therefore, there is a need for more interesting and enjoyable learning methods, one of which is culture-based (Laksana et al., 2021). One approach that is suitable for this is ethnomathematics (Khaerani et al., 2024). Ethnomathematics is a branch of mathematics that studies how communities apply mathematical concepts in their daily lives, both in terms of their culture and traditions (D'Ambrosio, 1985). Previous studies have shown that ethnomathematics-based questions are effective in improving students' numerical abilities (R. Rahmawati et al., 2024). Ethnomathematics can increase students' motivation to learn by showing a clear connection between mathematical concepts and their daily lives (Lestari et al., 2024). Ethnomathematics can be used as an alternative method by teachers to facilitate students' cognitive understanding of mathematics (Kamid et al., 2023).

Therefore, this study developed an ethnomathematics-based cognitive assessment model specifically designed for junior high school students with dyscalculia using the ADDIE development model consisting of five stages, namely analysis, design, development, implementation, and evaluation. The development process was guided by the cognitive indicators of Bloom's Revised Taxonomy and incorporated an ethnomathematical

approach through the use of traditional games, such as congklak, along with question cards. The cognitive assessment model aims to evaluate students' cognitive abilities in solving mathematical problems, with congklak serving as an instrument to assist researchers in measuring the cognitive aspects of students with dyscalculia. Based on these considerations, the researcher was motivated to develop a product and conduct research entitled

“Ethnomathematics-Based Cognitive Assessment Model for Dyscalculia Students”

METHOD

This research is a Research and Development (R&D) study that uses the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) approach aims to create specific products or models that can be applied (Mustofa, 2025).

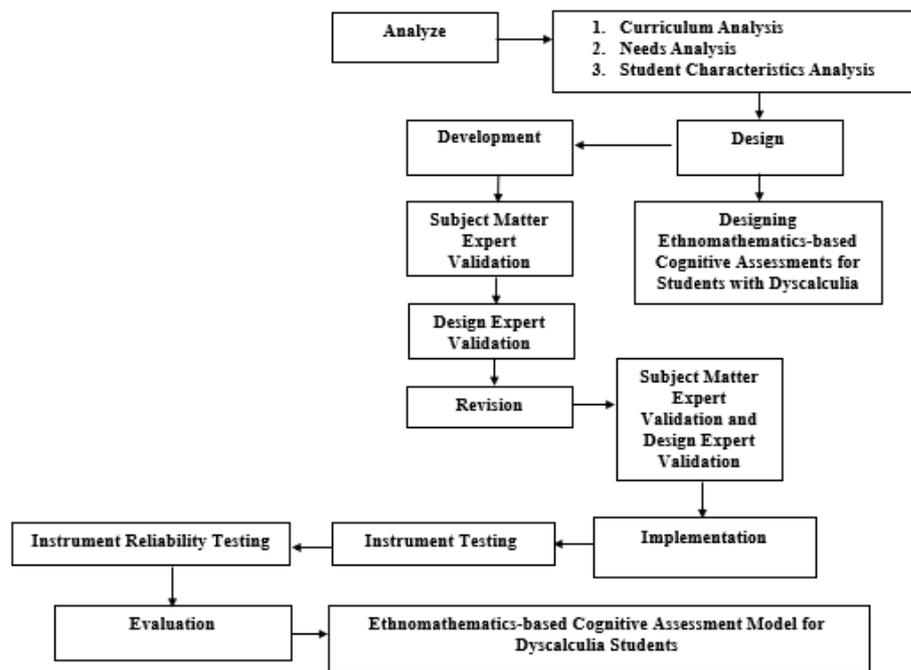


Figure 1. ADDIE Development Process

The objective of this development is to develop an ethnomathematics-based cognitive assessment model for student with dyscalculia. The subjects in this study were six students in class VII C at SLBN Prof. Dr. Sri Soedewi Masjchun Sofwan, S.H. in Jambi City. These subjects were selected through a screening test that assessed basic numerical skills, basic arithmetic facts, patterns and sequences, answer assessment and procedures, and behaviour and feelings.

In the analysis phase, researchers evaluated the curriculum, student needs,

and student characteristics. In the design phase, researchers determined the type of cognitive assessment model, created a question an assessment rubric. The development phase involves researchers in creating an ethnomathematics-based cognitive assessment model for students with dyscalculia, including the creation of a cover page, foreword, table of contents, introduction, basic concepts of the cognitive assessment model, learning outcomes, question grid, instructions for use, rules for the congklak game, questions and solutions, and assessment rubrics. In the implementation phase,

researchers will conduct limited trials with predetermined subjects. Finally, in the evaluation stage, researchers will assess the success of the ethnomathematics-based cognitive assessment model development for students with dyscalculia.

The instrument employed in this study included a screening test, material validation sheet, media validation sheet, and teacher instrument reliability tests. The screening instrument was used to identify students with dyscalculia using five-point Likert scale, starting as follows:

Table 1. Screening Criteria for Dyscalculia Test

Score	Description
Score 1	Never
Score 2	Rarely
Score 3	Sometimes
Score 4	Often
Score 5	Always

(Chinn, 2017)

The cognitive assessment instrument consisted of ethnomathematics-based questions integrated with the traditional congklak game. This tool is designed with reference to Bloom's Taxonomy, which has been modified and oriented towards three levels of cognition, namely Remembering (C1), Understanding (C2), and Applying (C3). Students' responses were assessed using a scoring rubric designed to evaluate their cognitive performance during the learning and assessment process. To determine the quality of the developed product, validation instruments in the form of questionnaires were used. The questionnaires were filled out by subject matter experts and media experts to assess the validity of the content, design, and suitability of the assessment model.

Data collection was conducted through (1) Observation, which included observing the process of teaching and learning mathematics in the classroom, (2) semi-structured interviews with homeroom teachers to obtain the necessary information, (3) Questionnaires, namely validity sheets distributed to subject matter experts, design experts, and teacher assessment sheets on students' cognitive specifications, (4) Documentation, that

includes photos and videos as supporting evidence during the research process.

The information processing technique in this study applied quantitative and qualitative methods. Quantitative figures were obtained through the assessment of validation questionnaires filled out by media experts and subject matter experts. Quantitative information was obtained from the input and responses provided by subject matter experts, media experts, and teachers. Quantitative data were analysed using descriptive analysis to describe the characteristics of the data for each assessment indicator. The results of the validation questionnaires completed by material experts and media experts were analysed using a percentage formula to determine the level of product validity. The percentage score was calculated using the following formula:

$$P = \frac{f}{N} \times 100\%$$

P is percentage score, f is total score obtained from validators, and N is maximum possible score. The percentage results were then interpreted based on the following validity criteria.

Table 2. Content validity Criteria

Kriteria Kevalidan	Interval Tingkat Kevalidan (%)
Invalid	$0\% \leq Vs \leq 20\%$
Less Valid	$20\% < Vs \leq 40\%$
Fair	$40\% < Vs \leq 60\%$
Valid	$60\% < Vs \leq 80\%$
Very Valid	$80\% < Vs \leq 100\%$

The reliability of the scoring rubric was analysed using inter-rater reliability. The rubric assessment was conducted by two assessors, namely the two different teachers, Teacher VII C and Teacher VII B. Furthermore, the consistency of assessment between raters was analysed using Inter-Rater Reliability (IRR) with the Interclass Correlation Coefficient (ICC) technique (Sridadi & Utama, 2016).

RESEARCH RESULTS AND DISCUSSION

At the analysis stage, data were collected to identify the needs and problems related to cognitive assessment for students with dyscalculia. Observations conducted at the school indicated that the assessment used by teacher was still limited to written tests and had not specifically accommodated to cognitive characteristics of students with

dyscalculia. Curriculum analysis showed that the school implemented the Merdeka Curriculum, with integer addition and subtraction as the learning material for Grade VII. Furthermore, student needs and characteristics analysis revealed that students with dyscalculia experienced difficulties in understanding number concepts and basic arithmetic operations. Therefore, an ethnomathematics-based cognitive assessment model was required to measure students' cognitive abilities more appropriately.

The second stage is planning. At this stage, several processes will be carried out, namely:

1) Cover Page

The cover page was designed to reflect the theme of Indonesia culture. The images used depict Indonesian culture, traditional games, and batik. The cover page is shown below.



Figure 2. Cover Page of the Cognitive Assessment Model

2) Introduction
The introduction section contains

the background of the cognitive assessment model and the objectives of the model. The following is the introduction section.

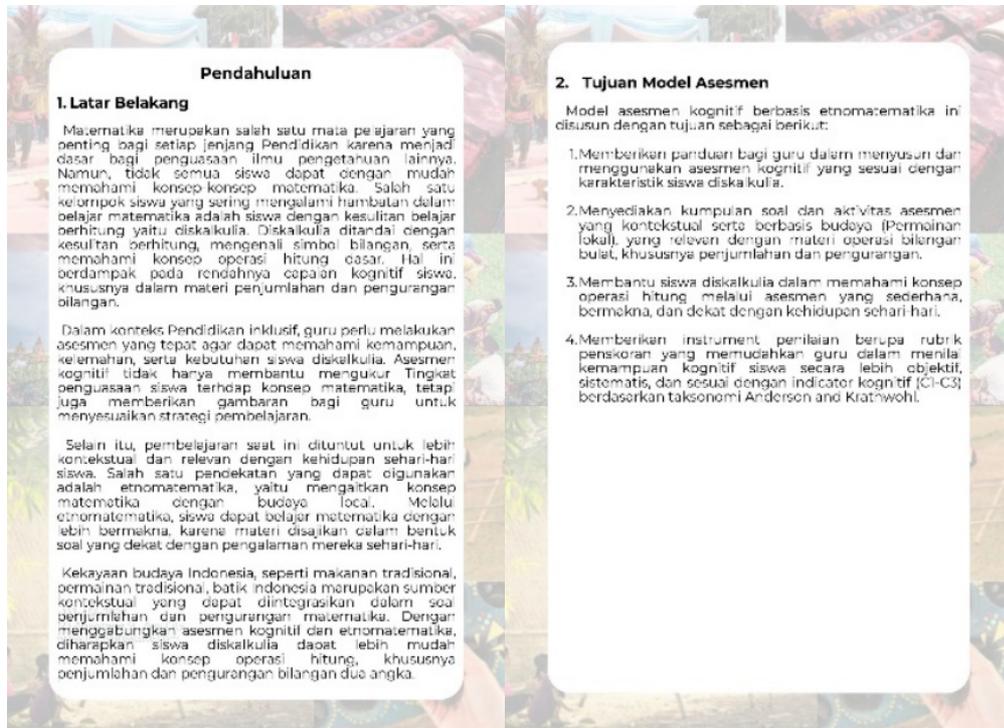


Figure 3. Introduction Page of Cognitive Assessment Model

3) Basic concepts of the cognitive assessment model
This section contains the definition of cognitive assessment and

the cognitive indicators used. The following is a preview of the cognitive indicators

Konsep-konsep Dasar Model Asesmen Kognitif

2. Indikator Kognitif

Tingkat Kognitif	Kata Operasional	Indikator Soal
Mengingat (C1): Siswa mampu mengenali simbol operasi hitung, karakteristik papan congklak, menyebutkan aturan dasar, dan mengidentifikasi perubahan jumlah biji kerang		
Mengingat	Mengenal	Mengenal simbol operasi penjumlahan "+" yang muncul pada kartu pertanyaan. Mengenal simbol operasi pengurangan "-" yang muncul pada kartu pertanyaan. Mengenal karakteristik papan congklak.
	Mengingat	Mengingat aturan dasar permainan congklak (arah memutar/balik biji)
	Mengidentifikasi	Mengidentifikasi perubahan jumlah biji setelah dipindahkan
Memahami (C2): Siswa mampu memahami makna perubahan jumlah biji kerang dan menjelaskan secara sederhana mengenai peraturan dasar permainan		
Menjelaskan sederhana	Menjelaskan	Menjelaskan secara sederhana apa yang terjadi ketika biji ditambah atau dikurangi
		Menjelaskan secara sederhana mengenai peraturan dasar permainan
Mengaplikasikan (C3): Siswa mampu menyelesaikan operasi hitung penjumlahan dan pengurangan dua bilangan bulat maksimal 100		
Menyelesaikan	Menyelesaikan	Menyelesaikan operasi hitung penjumlahan dua bilangan bulat maksimal 100
	Menyelesaikan	Menyelesaikan operasi hitung pengurangan dua bilangan bulat maksimal 100

Figure 4. Basic Concepts of the Cognitive Assessment Model

4) Instruction for Use
This section contains instructions for use for teachers, which include the target users of the model

components and the steps for use. The following is a preview of the model for use.



Figure 5. Instruction for Use

5) Question Matrix Page
This section contains learning outcomes, cognitive indicators, question indicators, ethnomatematics used,

question items, and the number of questions. The following is a display of the question matrix

Kisi-kisi Soal

Capaian Pembelajaran: Menunjukkan cara melakukan penjumlahan dan pengurangan hasil penjumlahan dan bilangan dua angka maksimal 100, menyatakan cara melakukan pengurangan dan menghitung hasil pengurangan dua bilangan dua angka maksimal 100, melakukan operasi hitung perkalian sampai 20, melakukan operasi hitung pembagian sampai 20, menyajikan bilangan pecahan sederhana menggunakan bentuk kardus, memfikan bilangan pecahan sederhana, menghitung hasil penjumlahan dan pecahan dengan penyebut sama, mengurut cara pengurangan dua bilangan hitung secara sederhana dalam kehidupan sehari-hari, memahami operasi hitung (penjumlahan, pengurangan, perkalian, dan pembagian) menggunakan alat bantu hitung secara sederhana dalam kehidupan sehari-hari, menyajikan pecahan yang Rp500,00 sampai dengan Rp100.000,00, dan melakukan konversi nilai uang Rp500,00 sampai dengan Rp100.000,00.

Indikator Kognitif	Indikator Soal	Etnomatematika	Bentuk Soal	Jumlah Soal
C1. Mengingat	Mengenal simbol operasi penjumlahan "+" yang berarti pada kartu pertanyaan.	Permainan Congklak	1	9
	Mengenal simbol operasi pengurangan "-" yang berarti pada kartu pertanyaan.		1	
	Mengenal lambang/bunyi papan congklak		3	
	Mengingat aturan dasar permainan congklak (jauh memindahkan biji)		3	
	Mengidentifikasi perubahan jumlah biji setelah dipindahkan.		1	
C2. Memahami	Menjelaskan secara sederhana apa yang terjadi ketika biji ditambak atau dituang		3	3
	Menjelaskan secara sederhana mengenai peraturan dasar permainan		2	
C3. Mengaplikasikan	Menyebutkan operasi hitung penjumlahan dan bilangan dua angka maksimal 100		3	6
	Menyebutkan operasi hitung pengurangan dan bilangan dua angka maksimal 100		3	

Figure 6. Question Matrix Page

6) Congklak Game Rules Page

This section contains 17 rules of the congklak game that students

understand. These rules must be obeyed during the game. The following is a display of the rules of the congklak game

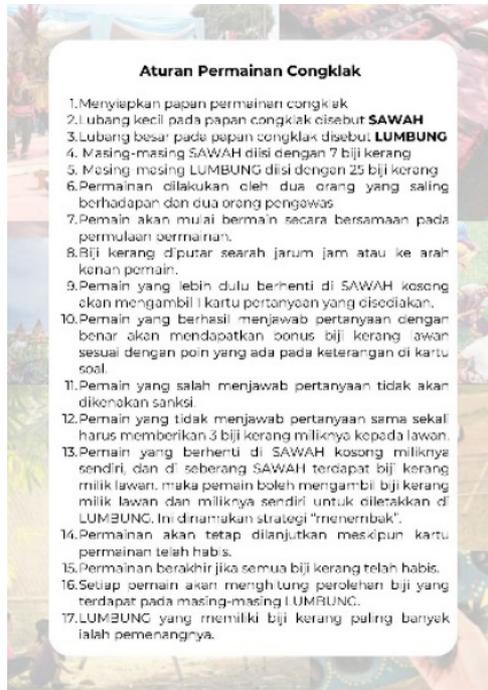


Figure 7. Congklak Game Rules Page

7) Questions and Answers Page

This section contains the questions found on the question cards

and their answers. The following is a display of this page

No.	Soal Kartu Pertanyaan	Jawaban	Skor
1		Pengurangan	2
2		Pengurangan	2
3		14	4
4		Lumbung	2
5		Sawah	2

Figure 8. Questions and Answers Page

8) Assessment Rubric Page

This section contains the assessment rubric for each question in

accordance with the cognitive indicators being measured. The following is a display of this page

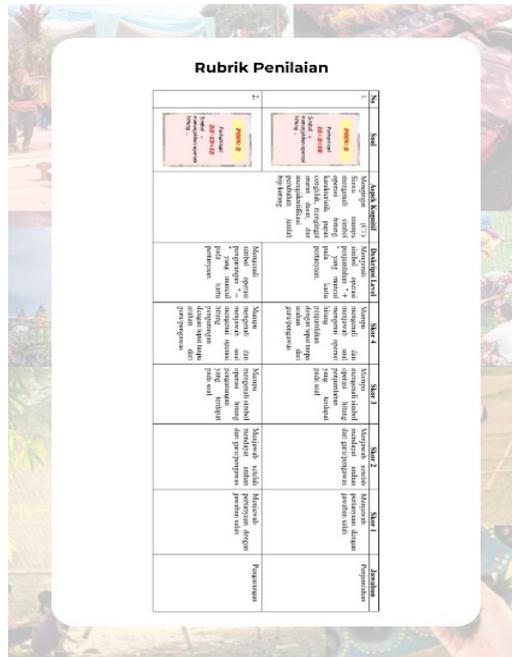


Figure 9. Assessment Rubric Page

The third stage is development. At this stage, the process of the developing a valid and reliable product that can be used. The developed product must be validated by subject matter experts and design experts. The results

of the validation can be used as input for improving the product that has been created. The results of the validation by subject matter experts and media experts are shown in the following table.

Table 3. Media Expert Validation Data Results

Media Suitability of the ethnomathematics-Based cognitive Assessment Models	
Description	Explanation
Score Obtained	48
Maximum Score	64
Percentage	75%
Category	Valid

Table 4. Material Expert Validation Data Results

Material Suitability of the ethnomathematics-Based cognitive Assessment Models	
Description	Explanation
Score Obtained	48
Maximum Score	64
Percentage	75%
Category	Valid

Based on Table 3 and Table 4, the results of validation by media experts and subject matter experts show that the developed ethnomathematics-based cognitive assessment model obtained scores of 48 out of a maximum score of 64 with a percentage of 75% and 48 out of a maximum score of 64 with a percentage of 75%, both of which are classified as valid. These results indicate that the cognitive assessment model and the developed materials or questions are

suitable for use after revision in accordance with the suggestions and input from media experts and subject matter experts.

Reliability testing was then conducted to determine the consistency of assessments between assessors. The reliability test in this study Inter-Rater Reliability (IRR) with the Interclass Correlation Coefficient (ICC) technique. The reliability test results are presented in the following table.

Table 5. Data From Cognitive Assessment Model Reliability Testing

Reliability Test of Ethnomathematics-Based Cognitive Assessment Model for Students with Dyscalculia	
Statistic	Value
Average Measures	0.892
Reliability Category	Very High

Based Table, the Inter-Rater Reliability value of the ethnomathematics-based cognitive assessment model for students with dyscalculia is 0,892, which indicates very high reliability and shows consistent assessments between raters.

One of the objectives of learning outcome evaluation is the cognitive aspect. Bloom's Taxonomy, revised by Anderson and Krathwohl, can measure students' abilities based on a person's cognitive processes, ranging from low-level to high-level thinking skills (Anderson & Krathwohl, 2001). The instrument developed in this study integrates cognitive aspects only up to C3, namely applying.

Remembering

In terms of memory, students are expected to be able to remember the information, data, and ideas they have learned (Nafiati, 2021). The main focus in this section on addition and subtraction of integers is to recognize arithmetic symbols, the characteristics of the abacus, remember the basic rules of the game, and identify changes in the number of shells. The assessment results show that some

students are able to recognize addition and subtraction symbols well without the help of teacher, while others still experience difficulties. Students with dyscalculia tend to be unable be understand arithmetic concepts or recognize arithmetic symbol (addition, subtraction, division, multiplication, and division, as well as root forms) (A. Rahmawati et al., 2023). These difficulties were seen in subjects who took longer to recognize arithmetic symbols. This is line with learning difficulties in mathematics is weakness in arithmetic caused by misreading symbols and operating numbers incorrectly (Amalia et al., 2022). However, the use of the congklak game helped teachers assess students' cognitive aspects while playing and working on questions on the question cards.

Understanding

At this stage of understanding, student are expected to create meaning or interpret learning communication, whether from what is said, written down, or illustrated. The main focus in this section is to explain in simple terms what happens when shells are added or subtracted and to explain the basic rules of

the game in simple terms. The results of this study show that some subjects are able to explain in simple terms what happens when shells are added or subtracted. In this case, it means that students are able to explain the concepts of addition and subtraction through the transfer of shells. However, there were subjects who still had difficulty explaining the concepts of addition and subtraction with shells. These subjects found it difficult to understand the questions, determine numbers using their fingers, and perform addition or subtraction calculations using their fingers even through the numbers were very small. Children with dyscalculia have difficulty performing simple calculations without aids and take a long time to do so, often resulting in inaccurate answers even when counting with their fingers (I. D. Rahmawati et al., 2024). Therefore, the use of shell beads in the congklak game serves as a concrete medium that helps students build a more tangible and meaningful understanding of concepts. The use of physical tools, such as objects that can be seen and touched, can make it easier for students to understand numbers and mathematical calculations in a clearer and more understandable way (Sholihah et al., 2025). This shows that ethnomathematics-based cognitive assessment models can facilitate teachers in assessing the comprehension skills (C2) of students with dyscalculia through play activities and answering questions in context.

Applying

In the application process, subject was expected to be able to complete addition and subtraction operations involving two integers in the given problems. Application skills were demonstrated through the accuracy of students in completing calculations based on the context of the congklak game and the problems on the question cards. The results showed that some subjects were

able to complete the addition and subtraction operations of two integers accurately, although they still needed the help of a guide line. This finding is in line with the characteristics of dyscalculic students who experience an inability to master skills in number operations involving addition, subtraction, multiplication, and division, so that dyscalculic students need visual aids in the calculation process (Nurfadhillah et al., 2025). However, some subjects still reversed numbers when writing, for example, 13 became 31, indicating that the students' symbolic representation skills were not yet fully developed. Nevertheless, the use of the congklak game and question cards can be a medium used to measure students' cognitive aspects. Therefore, it can be said that cognitive assessment models that focus on ethnomathematics can support teachers in evaluating the application skills (C3) of students with dyscalculia through games and problem-solving activities that are relevant to the context.

CONCLUSION

This study produced an ethnomathematics-based cognitive assessment model using traditional congklak and sol card games for students with dyscalculia. The assessment model was designed to assess students' cognitive abilities in addition and subtraction of whole numbers through play activities and contextual problem solving. The results of evaluations conducted by experts in the field of teaching materials and media show that the cognitive assessment model based on ethnomathematics is considered valid and appropriate for implementation. In addition, the reliability test results using Inter-Rater Reliability (IRR) with the Interclass Correlation Coefficient (ICC) technique, showed that the scoring rubric had a very high reliability and shows consistent assessments between raters. This ethnomathematics-based cognitive assessment model is capable of assessing

the cognitive abilities of students with dyscalculia in the aspects of remembering (C1), understanding (C2), and applying (C3). The use of the congklak game as a culture context helps students understand and apply the concepts of addition and subtraction in a more concrete and meaningful way. Thus, the assessment model developed can be use an alternative tool for assessing the cognitive abilities of dyscalculic students in mathematics learning.

REFERENSI

- Amalia, D. R., Chan, F., & Sholeh, M. (2022). Analisis Kesulitan Siswa Belajar Operasi Hitung Perkalian pada Pembelajaran Matematika di Kelas IV. *Jurnal Pendidikan Dan Konseling*, 4(3), 945–957.
- Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives: complete edition*. Addison Wesley Longman, Inc.
- Chinn, S. (2017). *More Trouble with Maths* (2nd ed.).
- D'Ambrosio, U. (1985). Ethnomathematics and its place in the history and pedagogy of mathematics. *For the Learning of Mathematics*, 5(1), 44–48.
- Damarasri, D., Handayani, S., & Sofiyah, K. (2024). Matematika Praktis: Penerapan dalam kehidupan Sehari-hari Anak SD. *Calakan: Jurnal Sastra, Bahasa, Dan Budaya*, 2(1), 36–42.
<https://doi.org/https://doi.org/10.61492/calakan.v2i1.125>
- Fitria, C., & Siswono, T. Y. E. (2014). Profil Keterampilan Berpikir Kreatif Siswa dalam memecahkan Masalah Matematika Ditinjau dari tipe Kepribadian (Sanguinis, Koleris, Melankolis, dan Phlegmatis). *Jurnal Ilmiah Pendidikan Matematika (Mathedunesa)*, 3(3), 23–32.
- Giriansyah, F. E., Pujiastuti, H., & Ihsanudin, I. (2023). Kemampuan Pemahaman Matematis Siswa Berdasarkan Teori Skemp Ditinjau dari Gaya Belajar. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 7(1), 751–765.
- Hakim, S., Amaliah, N., & Surahmi. (2025). Analisis Implementasi Kurikulum Merdeka pada Tahap Perencanaan, Pelaksanaan, dan Evaluasi di SMA Negeri 1 Pamboang Majene. *Jurnal Pengabdian Masyarakat Dan Riset Pendidikan*, 3(4), 2109–2119.
<https://doi.org/https://doi.org/10.31004/jerkin.v3i4.695> ARTICLE
- Jalal, N. M. (2025). Tren dan Arah Penelitian Diskalkulia Pada Siswa Sekolah Dasar: Analisis Bibliometrik dan Systematic Literature Review. *Jurnal Ilmiah Pendidikan Dasar (JIPDAS)*, 5(4), 4579–4589.
<https://doi.org/https://doi.org/10.37081/jipdas.v5i4.4287>
- Kamid, K., Hasiibunnisa, H., & Sari, A. K. (2023). Analisis Keterampilan Proses dalam Pemecahan Masalah Matematika Berbasis Etnomatematika pada Siswa Diskalkulia. *Edukatif: Jurnal Ilmu Pendidikan*, 5(6), 2463–2477.
<https://doi.org/10.31004/edukatif.v5i6.5744>
- Khaerani, Arismunandar, & Tolla, I. (2024). Peran Etnomatematika dalam Meningkatkan Mutu Pembelajaran Matematika: Tinjauan Literatur. *Indonesian Journal of Intellectual Publication*, 5(1), 20–26.
<https://doi.org/https://doi.org/10.51577/ijpublication.v5i1.579>
- Laksana, D. N. L., Awe, E. Y., Sugiani, K. A., Ita, E., Rawa, N. R., & Noge, M. D. (2021). *Desain pembelajaran berbasis budaya* (D. N. L. Laksana & E. Y. Awe (eds.); 1st ed.). Penerbit

- Nem.
- Lestari, S. A. P., Kusumaningrum, D. S., & Nurapriani, F. (2024). Integrasi Etnomatematika dalam Pembelajaran Bangun Datar Segi Empat Berbasis Kearifan Lokal untuk Meningkatkan Pemahaman Matematika. *Jurnal Inovasi Penelitian Dan Pengabdian Masyarakat*, 4(2), 161–171. <https://doi.org/https://doi.org/10.53621/jippmas.v4i2.369> ABSTRAK
- Murni, N. F. (2021). Upaya Meningkatkan Keaktifan Siswa Dalam Proses Pembelajaran. *Science, Engineering, Education, and Development Studies (SEEDS): Conference Series*, 5(1), 7–11. <https://doi.org/10.20961/seeds.v5i1.56736>
- Mustofa, M. A. (2025). *Metodologi penelitian kuantitatif, kualitatif, dan RnD*. Umi Safangati Hidayatun.
- Nabillah, T., & Abadi, A. P. (2019). Faktor penyebab rendahnya hasil belajar siswa. *Prosiding Seminar Nasional Matematika Dan Pendidikan Sesiomadika*, 2(1c), 659–663. <http://journal.unsika.ac.id/index.php/sesiomadika>
- Nafiati, D. A. (2021). Revisi taksonomi Bloom: Kognitif, afektif, dan psikomotorik. *Humanika*, 21(2), 151–172. <https://doi.org/10.21831/hum.v21i2.29252>
- Novianti, R. (2021). Pengaruh Media Stamp Game Dalam Meningkatkan Kemampuan Berhitung Anak Diskalkulia. *Seminar Nasional Jurusan Pendidikan Luar Biasa Fakultas Ilmu Pendidikan Universitas Negeri Malang*, 54–62.
- Nurfadhillah, S., Khofifah, A., Fahrudin, M. F., & Hasan, S. N. (2025). *Penyusunan Assesment Kemampuan Berhitung Permulaan Kelas Rendah (Diskalkulia)*. 18(2). <https://doi.org/10.9644/sindoro.v3i9.267>
- Rahmawati, A., Witono, A. H., & Mataram, U. (2023). Learning Methods for Children Who Have Difficulty Learning Dyscalculia in Class II Elementary School. *Renjana Pendidikan Dasar*, 3(4), 225–229.
- Rahmawati, I. D., Ayu, M., Salmiah, J., & Andriani, O. (2024). Karakteristik dan Klasifikasi Anak Berkebutuhan Khusus Secara Akademik. *Jurnal Pendidikan Vokasi Dan Seni*, 2(2), 16–26. <https://doi.org/https://doi.org/10.52060/jpvs.v2i2.2017>
- Rahmawati, R., Pramasdyahsari, A. S., & Prayito, M. (2024). Pengembangan Soal Numerasi Berbasis Etnomatematika Di Jenjang Sekolah Menengah Pertama Kelas VII. *Delta-Pi Jurnal Matematika Dan Pendidikan Matematika*, 13(2), 171–184.
- Sa'diyah, T. (2022). Penerapan Pembelajaran Pendidikan Agama Islam Dalam Membentuk Karakter Pribadi yang Islami. *KASTA : Jurnal Ilmu Sosial, Agama, Budaya, Dan Terapan*, 2(3), 148–159.
- Sari, M. M., Putri, P. R., & Andriani, O. (2024). Implementasi Assesment Akademik Dan Perkembangan Anak Berkebutuhan Khusus. *Jurnal Pendidikan Berkarakter*, 2(1), 231–239. <https://doi.org/https://doi.org/10.51903/pendekar.v2i1.584>
- Sholihah, S. R., Zahroh, K., & Shiddiq, A. (2025). Peran Guru dalam Menangani Kesulitan Belajar Matematika pada Siswa dengan Diskalkulia di SLB Yasmin Sumenep. *Jurnal Pendidikan Dan Bahasa (Dinamika Pembelajaran)*, 2(2), 114–123. <https://doi.org/https://doi.org/10.62383/dilan.v2i3.1894>
- Sridadi, & Utama, A. B. (2016).

Pengembangan Instrumen Tes Keterampilan dasar Bolatangan Bagi Mahasiswa. *Jurnal Pendidikan Jasmani Inonesia*, 12(November), 110–116.