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An Exploration of Mathematical Elements in Sasambo Culture as a Resource for Ethnomathematics Based Learning

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Abstract: This study aims to explore the mathematical elements embedded in Sasambo culture (Sasak, Samawa, and Mbojo) and their potential as learning resources for ethnomathematics-based mathematics education. Using a qualitative approach through literature review, the study analyzed scientific articles obtained from systematic searches on Google Scholar with keywords related to Sasambo ethnomathematics. The findings reveal that Sasambo cultural heritage contains a wide range of mathematical concepts, including plane and solid geometry, patterns, symmetry, geometric transformations, measurement, and problem-solving strategies. These concepts are reflected in traditional architecture such as Bale Tani, Uma Lengge, and Istana Dalam Loka; in the geometric patterns of Sasak and Tembe Nggoli weaving arts; and in cultural activities and traditional games such as Perisean, Barapan Kebo, Nyongkolan, and Dengklaq. The study highlights the potential of integrating these cultural elements into mathematics learning to make it more contextual, meaningful, and engaging for students. Additionally, this integration fosters students' cultural identity and appreciation of local wisdom. The study concludes that systematic efforts are needed to develop culturally-based instructional materials and to provide teacher training on ethnomathematics integration. Such efforts will not only improve students' mathematical understanding but also strengthen their connection to local cultural heritage, making mathematics learning more relevant to their daily lives..

Keywords: Ethnomathematics, Sasambo Culture, mathematics learning, traditional architecture, weaving arts, traditional games

Abstrak: *Penelitian ini bertujuan untuk mengeksplorasi elemen-elemen matematika yang terkandung dalam budaya Sasambo (Sasak, Samawa, dan Mbojo) serta potensinya sebagai sumber belajar dalam pendidikan matematika berbasis etnomatematika. Dengan menggunakan pendekatan kualitatif melalui studi literatur, penelitian ini menganalisis artikel-artikel ilmiah yang diperoleh dari pencarian sistematis di Google Scholar dengan kata kunci yang berkaitan dengan etnomatematika Sasambo. Temuan penelitian mengungkapkan bahwa warisan budaya Sasambo memuat berbagai konsep matematika, termasuk geometri bidang dan geometri ruang, pola, simetri, transformasi geometri, pengukuran, dan strategi pemecahan masalah. Konsep-konsep tersebut tercermin dalam arsitektur tradisional seperti Bale Tani, Uma Lengge, dan Istana Dalam Loka; dalam pola geometris pada seni tenun Sasak dan Tembe Nggoli; serta dalam aktivitas budaya dan permainan tradisional seperti Perisean, Barapan Kebo, Nyongkolan, dan Dengklaq. Penelitian ini menyoroti potensi integrasi elemen budaya tersebut ke dalam pembelajaran matematika untuk menjadikannya lebih kontekstual, bermakna, dan menarik bagi peserta didik. Selain itu, integrasi ini juga berkontribusi dalam menumbuhkan identitas budaya dan apresiasi terhadap kearifan lokal. Penelitian ini menyimpulkan bahwa diperlukan upaya sistematis untuk mengembangkan bahan ajar berbasis budaya serta pelatihan guru mengenai integrasi etnomatematika. Upaya tersebut tidak hanya akan meningkatkan pemahaman matematika peserta didik, tetapi juga memperkuat keterhubungan mereka dengan warisan budaya lokal, sehingga pembelajaran matematika menjadi lebih relevan dengan kehidupan sehari-hari mereka.*

Kata Kunci: *Etnomatematika, Budaya Sasambo, pembelajaran matematika, arsitektur tradisional, seni tenun, permainan tradisional*

INTRODUCTION

Mathematics has long been regarded as an exact science that is universal and value-free. However, this perspective often creates a gap between students and the subject matter, particularly in regions rich in local cultural heritage such as West Nusa Tenggara (NTB). In practice, many students find it difficult to understand abstract mathematical concepts because learning is often presented without any connection to their everyday life and cultural context. As a result, mathematics is frequently perceived as a difficult subject that feels distant from students' real-life experiences.

One approach that is believed to bridge this gap is ethnomathematics. D'Ambrosio (1985), as cited by Wahyuni & Kusaeri (2024), defines ethnomathematics as the ways in which cultural groups understand, express, and apply mathematical concepts in their daily lives. This approach views mathematics not merely as a collection of numbers and formulas but as a dynamic cultural product that reflects the thinking patterns of a community. In the educational context, ethnomathematics promotes the integration of local cultural contexts into mathematics learning to create more meaningful, relevant, and engaging learning experiences for students (Novelza et al., 2023).

Various studies have shown that ethnomathematical approaches positively impact student engagement, understanding, and achievement. Learning mathematics by connecting it with local culture has been proven to improve students' critical thinking, problem-solving, and mathematical communication skills (Widada et al., 2019; Rosinansis et al., 2022; Zuhri et al., 2023). Moreover, research by Turmuzi et al. (2024) emphasizes that culturally-based learning not only strengthens students' understanding of mathematical concepts but also builds cultural identity and fosters pride in their local heritage.

In NTB, the rich cultural heritage of the three major ethnic groups (Sasak, Samawa, and Mbojo) collectively known as Sasambo, offers great potential for integration into mathematics learning. Sasambo culture encompasses various cultural elements such as traditional architecture (Bale Tani, Uma Lengge, and Istana Dalam Loka), geometric patterns in woven fabrics (Sasak Motifs and Tembe Nggoli), as well as traditional games and cultural activities (Gasing, Barapan Kebo, Congklak, and others). These cultural elements contain mathematical concepts such as two-dimensional and three-dimensional shapes, patterns, symmetry, geometric transformations, measurement, and problem-solving strategies that are highly relevant for mathematics learning.

However, the potential of Sasambo culture as a learning resource for mathematics in NTB has not yet been fully optimized. Mathematics instruction in schools still heavily relies on national textbooks that do not accommodate local cultural contexts. Furthermore, the lack of teacher training on the implementation of ethnomathematics and the absence of guidelines for integrating local culture into the curriculum have resulted in the underutilization of Sasambo culture as a learning resource in classrooms. Yet, studies have shown that integrating local culture into mathematics learning not only improves students' conceptual understanding but also provides learning experiences that are closely connected to their real-life contexts (Sari, 2022).

At the same time, the Merdeka Curriculum currently being implemented in Indonesia encourages context-based and differentiated learning, opening up greater opportunities to develop culturally relevant teaching practices. In this framework, ethnomathematics serves as a strategic bridge to connect local cultural heritage with more contextual and humanistic mathematics learning. Castro (2024) asserts that integrating local culture into the curriculum not only enhances learning effectiveness but also strengthens students' sense of identity and self-awareness. In other words, students are not only learning *about* mathematics but also learning *through* and *within* their own culture.

While various studies on ethnomathematics have been conducted in other regions of Indonesia, such as West Java, West Sumatra, and South Sulawesi, systematic and in-depth exploration of the Sasambo culture's potential in mathematics learning remains very limited. Previous studies by Islamiati & Purnamansyah, (2024) have partially identified the ethnomathematical potential of NTB's cultural elements, but have yet to provide a comprehensive mapping of how Sasambo culture can be integrated into various mathematics learning topics at both elementary and secondary education levels.

Based on this background, this article aims to explore the mathematical elements within Sasambo culture as a resource for ethnomathematics-based mathematics education. By optimizing local cultural wealth as a contextual and meaningful learning medium, this study seeks to support the development of teaching materials and learning strategies that integrate local culture, ultimately enhancing the quality of mathematics education in West Nusa Tenggara (NTB) and across Indonesia.

Mathematics is often seen as a universal and value-free science, which can create a disconnect between students and the subject, especially in culturally rich regions like NTB. Students frequently struggle with abstract concepts due to teaching methods that lack connection to their daily lives and culture, leading to perceptions of mathematics as difficult and irrelevant. The urgency of this research lies in bridging this gap by integrating Sasambo culture into mathematics learning, aligning with the Merdeka Curriculum's emphasis on contextual and differentiated learning. This approach not only improves conceptual understanding but also fosters cultural identity and pride. Addressing the underutilization of local culture in education due to limited materials and teacher training, this study contributes to culturally relevant instructional development, making mathematics a living and meaningful experience for students.

METHODE

This study employed a qualitative approach using the systematic literature review (SLR) method to explore the potential of Sasambo cultural wisdom (Sasak, Samawa, and Mbojo) in mathematics education. The SLR method was chosen because it provides a systematic and transparent procedure for selecting and analyzing literature, thereby enhancing the validity of the study findings (Schmeisser, 2013).

The literature was sourced through searches on platforms such as Google Scholar, Scopus, and SpringerLink using keywords like "Sasak ethnomathematics," "Samawa

ethnomathematics," and "Mbojo ethnomathematics." The initial search yielded 120 articles. After screening titles and abstracts to remove duplicates and irrelevant studies, 75 articles remained for further consideration. Subsequently, a full-text evaluation based on inclusion criteria academic publications from 2015 to 2024, relevance to the topic, and quality standards resulted in 34 articles selected for in depth analysis. This selection process was documented in a literature search table to ensure transparency and systematic filtering (Boell & Cecez-Kecmanovic, 2014).

Data analysis was conducted qualitatively using content analysis, involving data presentation, interpretation of mathematical meanings, discussion of integration potential into mathematics learning, and drawing conclusions. The instruments employed included literature analysis tables and thematic frameworks to organize data and map relationships between cultural concepts and mathematical elements. Among the 34 articles, six explored and discussed the traditional architecture of Bale Tani, four explored the traditional architecture of Uma Lengge, four explored the traditional architecture of Istana Dalam Loka, seven explored the traditional weaving art of Sasak weaving motifs, seven explored the traditional weaving art of Tembe Nggoli, and six explored cultural activities and traditional games in Sasambo culture.

Through these procedures, the study is expected to provide a comprehensive overview of how Sasambo cultural elements can be integrated into mathematics education while also strengthening students' cultural identity.

RESULT AND DISCUSSION

This study focuses on identifying the local cultural elements of the Sasambo community (Sasak, Samawa, and Mbojo) that contain mathematical concepts. The local cultural heritage of West Nusa Tenggara (NTB), particularly from the Sasak, Samawa, and Mbojo ethnic groups collectively known as Sasambo offers a variety of cultural forms rich in social values and mathematical potential that are often overlooked in formal education. The cultural diversity of NTB not only enriches the region's social identity but also preserves mathematical ideas that can be utilized to enhance mathematics education through an ethnomathematical approach.

Ethnomathematics serves to identify and articulate how mathematical concepts are interwoven with cultural practices, artifacts, and the daily lives of these communities. This approach facilitates a deeper understanding of mathematical principles while maintaining cultural identity. By identifying mathematical concepts within local culture, educators can enrich students' mathematics learning experiences, provide more relevant learning contexts, and improve the applicability of mathematical knowledge.

MATHEMATICAL ELEMENTS IN TRADITIONAL ARCHITECTURE

1. Bale Tani (Sasak)

Based on the literature review, six articles were identified that explore and discuss the traditional architecture of Bale Tani and its ethnomathematical concepts. The following table summarizes the mathematical elements contained in the Bale Tani architecture as analyzed from these articles:

Table 1. Summary of Literature Exploration on the Mathematical Elements of Bale Tani

No	Authors (Year)	Article Title	Exploration Findings
1	Fauzi et al. (2022)	Ethnomathematics: Mathematical ideas and educational values on the architecture of Sasak traditional residence	The front view of the roof forms a trapezoid, the side view forms a triangle, the door forms a rectangle, the ceiling forms a square, and the staircase forms a block.
2	Rohvian a et al. (2024)	*Etnomatematika Pada Budaya Sasak Di Rumah Adat Bale Tani Desa Rembitan Sebagai Sumber Belajar Matematika*	Utilizing Bale Tani's traditional house elements such as triangles, rectangles, and trapezoids in area and perimeter calculations as learning media.The front roof forms a trapezoid with geometric properties; the side view forms a triangle; the door forms a rectangle; the ceiling forms a square.
3	Fauzi et al. (2020)	*Etnomatematika: Eksplorasi Budaya Sasak Sebagai Sumber Belajar Matematika Sekolah Dasar*	By integrating traditional architecture, crafts, and cultural activities, such as geometric shapes and patterns found in Bale Tani (e.g., trapezoidal and triangular roof shapes, rectangular walls), students can connect abstract mathematical concepts like geometry, symmetry, and measurement to real-world cultural contexts.
4	Fitriyah & Syafi'i (2022)	*Etnomatematika Pada Bale Lumbung Sasak*	Learning based on traditional houses such as trapezoids (roof), rectangles (door), and blocks (staircase structure) can be used to teach mathematical concepts in schools.
5	Fauzi, et al. (2022)	Realistic Mathematics Education: Building Mathematical Conceptions in Sasak Culture	Identification of plane and solid shapes in the roof, door, ceiling, and staircase, including area and perimeter calculations for rectangles, trapezoids, and blocks.
6	Simamor a et al. (2018)	Improving Students' Mathematical Problem Solving Ability and Self-Efficacy through Guided Discovery Learning in Local Culture Context	Geometric concepts found in building structures featuring triangles, trapezoids, and blocks applied in learning through practical activities and geometric calculations.

Image 1. Visualization of Bale Tani

Bale Tani, the traditional house of the Sasak community in West Nusa Tenggara (NTB), is not only a place of residence but also a tangible representation of how mathematics is integrated into daily life. Its architectural design incorporates various mathematical concepts particularly in geometry and measurement that are highly relevant to school learning.

a. ***Bale Tani Roof: Trapezoid and Triangle***

The roof, when viewed from the front, appears as a trapezoid with two unequal parallel sides. This shape serves as an ideal example to introduce the trapezoid, including its properties and angles. From the side, the roof forms a

triangle, which brings in concepts such as angles, height, area, and line symmetry making these geometric ideas more accessible to students.

b. ***Bale Tani Door: Rectangle***

The door is a clear example of a rectangle, with two pairs of parallel sides and four right angles. Students can explore the concepts of length, width, and 90-degree angles. Measuring the door's dimensions also provides a context for teaching unit conversions and estimating the amount of construction materials needed.

c. ***Bale Tani Ceiling: Square***

The ceiling of the house is shaped like a square, symbolizing simplicity and stability. It represents a two-dimensional shape with four equal sides and right angles. This offers students a real life application to calculate perimeter and area using geometric formulas.

d. ***Bale Tani Staircase: Rectangular Prism (Block)***

The staircase leading to the upper floor is shaped like a vertical rectangular prism. This structure helps students understand volume and surface area and allows them to apply spatial dimensions in practical contexts.

By utilizing the structure of *Bale Tani*, mathematics learning becomes more contextual, meaningful, and culturally relevant helping students grasp abstract concepts through their immediate environment and cultural heritage.

e. Uma Lengge (Mbojo)

Based on the literature review, four articles were identified that explore and discuss the traditional architecture of Uma Lengge and its ethnomathematical concepts. The following table summarizes the mathematical elements found in the architecture of Uma Lengge based on the analyzed articles:

Table 2. Summary of Literature Exploration on the Mathematical Elements of "Uma Lengge"

No	Authors (Year)	Article Title	Exploration Findings
1	Safitri et al. (2022)	*Eksplorasi Etnomatematika pada Bangunan Tradisional Uma Lengge*	This study highlights that every part of Uma Lengge represents living mathematical concepts. From its cone-shaped roof resembling a triangular prism, to its square-patterned bamboo floor, and rectangular walls. Moreover, the Bima community applies traditional measuring techniques using fingers, fists, and hand spans, offering opportunities to introduce non-standard measurement units in learning.
2	Farhan et al. (2021)	*Etnomatematika: Eksplorasi Uma Lengge untuk Pembelajaran Matematika di Sekolah*	Uma Lengge serves not only as traditional architecture but also as a living classroom for learning geometry. The structure helps teach concepts of squares, rectangles, and triangles. Parallel and perpendicular lines on the pillars and floors can serve as concrete media for introducing geometry in the classroom.
3	Safitri et al. (2022)	Uma Lengge Traditional Building as a Source of Ethnomathematics-Based Mathematics Learning Implementation	This study shows how Uma Lengge connects culture and mathematics through traditional measurement methods and geometric shapes. It promotes relevant learning by linking mathematical concepts with students' real-life and cultural experiences.
4	Islamiati & Purnama	*Pembelajaran Matematika Berbasis Etnomatematika: Kajian*	The symmetrical roof and repetitive patterns throughout the structure can be used to introduce concepts of symmetry and geometric transformations, can be used to explore fractal patterns, rotation, and

nsyah, (2024)	*Analisis Geometri Rumah Adat Uma Lengge*	reflection. This provides students with engaging, real-world learning experiences.

Image 2. Visualization of Uma Lengge

An analysis of the architecture of *Uma Lengge* the traditional house of the Mbojo community in Bima, West Nusa Tenggara reveals that this structure holds numerous mathematical concepts that can be utilized for contextual learning in schools. Nearly every part of this building incorporates elements of mathematics commonly taught in the curriculum.

a. Roof (Tapered Triangular Prism)

The most distinctive feature of *Uma Lengge* is its tapered roof, which resembles a triangular prism. This form can be used to introduce three-dimensional geometric shapes, such as the triangular prism, along with volume and surface area calculations. The symmetrical design also provides a good example for exploring line and rotational symmetry.

b. Floor (*Lante*)

The floor, made of woven bamboo in a square pattern, is ideal for introducing two-dimensional shapes like squares, including their area, perimeter, and geometric properties. The repetitive patterns also offer opportunities to discuss mathematical sequences and pattern recognition.

c. Walls (*Kabu Tadancai*)

The walls are shaped like rectangles, making them excellent examples for teaching two-dimensional geometry, including length, width, perimeter, and area. The presence of parallel and perpendicular lines on the walls supports the introduction of these geometric concepts.

d. Storage Room (*Ro Woha*)

The main storage space for harvests is cube-shaped. This provides a tangible model for learning about the volume and surface area of cubes, and also allows discussion of spatial similarity and proportion.

e. Lower Space (*Ro Awa*)

Located beneath the house and often used for tool storage or housing livestock, this space resembles a rectangular prism. It serves as a practical context for teaching volume, surface area, and the dimensions of length, width, and height.

f. Supporting Pillars

The pillars are arranged in parallel and perpendicular lines, reinforcing the concepts of parallelism and perpendicularity in geometry. Their symmetrical placement can also illustrate balance and symmetry in architectural design.

g. Patterns and Carved Decorations

Several parts of the house are adorned with repeated geometric patterns. These can be used to teach geometric transformations such as translation, rotation, reflection, and the concept of fractals.

h. Traditional Measurement Techniques

The local community uses non-standard measurement techniques, such as fingers, fists (*sakimi*), arm spans (*sasingku*), and hand stretches. These methods offer an engaging way to introduce non-standard units of length and compare them with standardized units.

Through this exploration, *Uma Lengge* is revealed not only as a cultural heritage structure but also as a rich, authentic source for mathematics learning. This local wisdom-based approach enriches students' understanding of mathematical concepts while fostering appreciation for their cultural heritage.

3. Traditional House of Sumbawa: Istana Dalam Loka (Samawa)

Based on the literature review, four articles were identified that explore and discuss the traditional architecture of Istana Dalam Loka and its ethnomathematical concepts. The following table summarizes the mathematical concepts embedded in the architecture of Istana Dalam Loka as analyzed from these articles:

Table 3. Exploration Results of Articles on the Mathematical Elements of "Istana Dalam Loka"

No	Authors (Year)	Article Title	Exploration Findings
1	Meyundasari et al. (2024)	The Geometric Concepts of the Istana Dalam Loka Traditional House	Highlights geometric concepts such as rectangles in doors, stairs, and floors; squares in floors and walls; circles in supporting pillars; and equilateral triangles in stair structures. This shows the potential of Istana Dalam Loka as a learning resource to introduce two-dimensional and three-dimensional geometric shapes.
2	Chen & Ja'Farud din, (2021)	Traditional Houses and Projective Geometry: Building Numbers and Projective Coordinates	Introduces basic theories of projective geometry to help students understand the structure of traditional houses, including Istana Dalam Loka. Explains projective transformation and spatial analysis concepts as part of geometry learning.
3	W. Chen & Chen (2025)	Ethnomathematics Projects for Projective Geometry in Distance Learning	Develops distance learning projects based on traditional houses using an ethnomathematics context. Promotes active student engagement in understanding projective geometry through the local cultural context of Istana Dalam Loka.
4	Negara, et. al (2024)	*Etnomatematika pada Istana Dalam Loka dan Desain Pembelajaran: Integrating Geometric Concepts through a Cultural-Based Learning Approach*	Explains the application of architectural elements such as the serambi (long porch), pillars (rectangles), and symmetrical reflection and rotation patterns as contextual learning media. Promotes culture-based mathematics learning through the traditional structure of Istana Dalam Loka.

Image 3. Visualization of Istana Dalam Loka

Istana Dalam Loka, a historical building in West Nusa Tenggara, incorporates a wide range of mathematical concepts through the shapes, patterns, and arrangements of its architectural elements. These concepts include two- and three-dimensional shapes, symmetry, repetitive patterns, proportion, geometric transformations, and projective geometry.

a. Doors and Windows

The square and rectangular shapes of the doors and windows reflect basic two-dimensional geometric concepts, such as length, width, perimeter, and area. The proportional balance between these elements illustrates the application of similarity and ratio.

b. Front Terrace (Veranda)

The terrace floor is shaped like a parallelogram, with parallel sides and equal opposite angles. Its diagonal divides the shape into two congruent triangles, supporting the teaching of symmetry and similarity.

c. Supporting Pillars

The pillars are shaped like rectangular prisms, introducing volume, surface area, and dimensional measurement. Their parallel arrangement also demonstrates repeating patterns.

d. Staircase

The rectangular steps are arranged sequentially, representing an arithmetic sequence. The consistent height and length of the steps provide an opportunity for mathematical analysis.

e. Main Hall and Frames

Rectangular and square frames around doors and windows reinforce understanding of perimeter, area, and spatial proportions.

f. Roof

The isosceles triangular roof illustrates line and rotational symmetry. It also supports learning about triangle height, angles, and geometric transformations.

g. Badong Decorations

Circular ornaments introduce concepts like diameter, radius, and circumference, as well as fractal patterns and shape repetition.

h. Symmetrical Structure and Patterns

The building features both reflective and rotational symmetry, offering real-world examples of geometric transformations. Repeating patterns appear in pillars and carvings.

i. Projective Geometry

From specific angles, the building's form reflects projective geometry concepts such as vanishing points and perspective illusions, enhancing students' spatial reasoning abilities.

MATHEMATICAL ELEMENTS IN TRADITIONAL WEAVING ARTS

1. Sasak Weaving Motifs

Based on the literature review, seven articles were identified that explore and discuss the traditional weaving art of Sasak weaving motifs and their ethnomathematical concepts. The following table summarizes the mathematical concepts embedded in the traditional Sasak weaving motifs based on the analyzed articles:

Table 4. Exploration Results of Articles on the Mathematical Elements of "Sasak Weaving Motifs"

No	Authors (Year)	Article Title	Exploration Findings
1	(Septiana et al., 2023)	*Eksplorasi Etnomatematika pada Motif Kain Tenun Desa Sukarara dan Implikasi dalam Pembelajaran Matematika*	Explores various geometric shapes such as squares, pentagons, hexagons, parallelograms, diamonds, and circles in Sasak weaving motifs from Sukarara and Alang. These shapes are used to introduce geometric transformations, reflections, rotations, translations, and symmetry in geometry learning.
2	(Sabilirrosyad, 2018)	*Ethnomathematics Sasak: Eksplorasi Geometri Tenun Suku Sasak Sukarara Dan Implikasinya Untuk Pembelajaran*	Explains concepts of symmetry, transformation, reflection, and rotational patterns in weaving motifs. Includes geometric shapes such as triangles, circles, hexagons, and star shapes that can be used as media for learning geometric transformations and pattern repetition.
3	(Sutarto, Hastuti, et al., 2021)	*Etnomatematika: Eksplorasi Transformasi Geometri Tenun Suku Sasak Sukarara*	Explores concepts of symmetry and transformations in motifs such as Wayang, Sabalelangan, Kekar, Bintang Empat, and Alang. These motifs reflect symmetrical patterns and geometric transformations.
4	(A. Fauzi & Setiawan, 2020)	*Etnomatematika: Konsep Geometri pada Kerajinan Tradisional Sasak dalam Pembelajaran Matematika di Sekolah Dasar*	Describes geometric elements such as squares, parallelograms, rhombuses, and star shapes in Sasak weaving patterns as learning resources for teaching geometric properties, area, and perimeter.
5	(Radiusman & Juniati, 2022)	*Kajian Etnomatematika Kain Tenun Lombok Berdasarkan Pola Geometri Wallpaper Dan Pola Geometri Frieze*	Analyzes wall patterns and weaving motifs such as Sabalelangan, Rarangjang, Ketupat, Kekar, and Lumbung Padi. These patterns can be used to teach reflection and rotational symmetry in geometry learning.
6	(Mariani et al., 2024)	*Pembelajaran Kultural Melalui Motif Kain Songket: Analisis Terhadap Karakteristik Masyarakat Suku Sasak*	Reveals hidden mathematical values in the cultural expressions of Sasak weaving, particularly in the Songket motif. These values can be utilized in character-building and mathematics learning activities.
7	(Kusaeri & Pardi, 2019)	*Etnomatematika pada Motif Tenun Sasak untuk Meningkatkan Pemahaman Konsep Geometri*	Explores geometric shapes such as circles, parallelograms, cubes, and floral motifs in Sasak weaving designs. These patterns are applied in mathematics learning to introduce geometric concepts in a cultural context.

Image 4. Visualization of Motif Tenun Sasak

Based on the analysis of the reviewed articles, Sasak traditional weaving motifs are not merely works of art with aesthetic value but also contain a wealth of mathematical elements that are highly beneficial for meaningful and contextual mathematics learning.

a. Main Motifs (Geometric Shapes)

The primary section of Sasak weaving motifs typically features various geometric shapes, such as triangles, squares, rectangles, rhombuses, pentagons, hexagons, and octagons. These shapes not only beautify the fabric but also provide opportunities to teach students about two-dimensional shapes, properties of sides and angles, perimeter, and area. Motifs such as *Subahnale* and *Bintang Empat* display clear and repetitive geometric patterns, making them useful for identifying different types of plane figures.

b. Border Motifs (Frieze Patterns)

Along the edges of the fabric, frieze patterns are often found, consisting of repeated motifs arranged horizontally across the border. These patterns illustrate the concept of translation (sliding), which can be used to explain repetition and pattern regularity in mathematics. In addition to translation, some border patterns also exhibit reflection (mirroring) and rotation, introducing students to geometric transformation concepts.

c. Central Motifs (Wallpaper Patterns)

In the center of the fabric, motifs are usually arranged in a wallpaper pattern repetitive designs that fill a surface symmetrically. Motifs such as *Ketupat*, *Keker*, and *Rangrang* are examples of this pattern. Wallpaper patterns teach students about two-dimensional repetition and symmetrical arrangements, which can be connected to the concept of tessellation and types of planar symmetry.

d. Pattern Lines (Straight and Curved Lines)

Within the motifs, straight and curved lines form the boundaries between patterns. These lines can be used to introduce concepts such as lines, angles, and relative positions, including parallelism and perpendicularity. Students can observe how these lines create structured and symmetrical designs.

e. Thread Arrangement and Pattern Repetition

The weaving process itself involves counting threads, adjusting the spacing between patterns, and repeating motifs, all of which require mathematical precision and regularity. Teachers can use this aspect to introduce the concepts of sequences and series, length measurement, and number patterns in real-life contexts.

f. Color and Symmetrical Composition

Color selection in Sasak weaving motifs is often arranged symmetrically and proportionally, as seen in the *Subahnale Songket* motif, which is known for its balanced color composition. This can serve as a learning medium for exploring color symmetry, proportion, and ratio, which are frequently encountered in transformation and geometric composition lessons.

g. Cultural Meanings and Philosophical Values

Each motif in Sasak weaving not only relies on visual beauty but also carries cultural values such as gratitude, patience, perseverance, and harmony. These values can be integrated into mathematics learning to foster positive attitudes, character development, and appreciation for local culture. This helps students perceive mathematics not only as a science of numbers but also as a tool for understanding life.

This exploration demonstrates that Sasak weaving motifs are a rich learning resource capable of connecting mathematics with students' cultural heritage and real-life experiences. Utilizing weaving motifs as learning media not only strengthens students' understanding of mathematical concepts but also fosters pride in their own cultural heritage.

2. Tembe Nggoli (Mbojo)

Based on the literature review, seven articles were identified that explore and discuss the traditional weaving art of Tembe Nggoli and its ethnomathematical concepts. The following table summarizes the mathematical concepts embedded in the traditional Tembe Nggoli weaving art as analyzed from the reviewed articles:

Table 5. Exploration Results of Articles on the Mathematical Elements of "Tembe Nggoli"

No	Authors (Year)	Article Title	Exploration Findings
1	Sutarto, Ahyansyah, et al., (2021)	*Etnomatematika: Eksplorasi Kebudayaan Mbojo Sebagai Sumber Belajar Matematika*	Tembe Nggoli incorporates geometric patterns such as triangles and diamonds. These shapes are used to introduce basic concepts of geometry and geometric transformations, such as reflection and rotation, in the classroom.
2	Az-Zahra et al. (2024)	*Eksplorasi Konsep Matematika Pada Tembe Nggoli Dan Potensinya Sebagai Sumber Belajar Geometri, Deret Aritmatika Dan Deret Geometri*	The Tembe Nggoli pattern demonstrates symmetry and geometric transformations that are integrated into educational contexts, particularly in the study of geometric patterns and their applications in local cultures.
3	Islamiati et al. (2024)	*Pengembangan Modul Matematika Berbasis Etnomatematika Tembe Nggoli untuk Meningkatkan Pemahaman Konsep Siswa Kelas VII SMPN 1 Dompu*	The Tembe Nggoli weaving pattern plays a significant role in teaching geometric transformations, including the application of symmetry, repetition, and tessellation.
4	Wahyuni & Kusaeri, (2024))	*Analisis Kemampuan Berpikir Kritis dan Berpikir Logis Siswa dalam Memecahkan Masalah Matematis Berbasis Etnomatematika Kain Tenun Tembe Nggoli Bima*	Tembe Nggoli introduces the concept of geometric symmetry, which can be applied in teaching about parallel lines, rotations, and reflective symmetry in a cultural context.
5	Nurbaeti et al. (2019)	Ethnomathematics on Woven Fabric (Tembe Nggoli) of Mbojo tribe society	The paper analyzes the role of geometric patterns in Tembe Nggoli weaving, including how repeating patterns illustrate mathematical ideas such as sequences, ratios, and proportionality.

6	Sowanto & Mulyadin (2019)	Developing of teaching materials for junior high school students based on ethnomathematics on traditional woven cloth (Tembe Nggoli) of Mbojo tribe	The study identifies how geometric shapes like triangles and hexagons in the weaving patterns serve as teaching tools for concepts such as angles, area, and volume.
7	Isnaniah et al. (2023)	Ethnomathematics Study: Mathematical Concepts in Bima Weaving Motifs	Focuses on the geometric properties of Tembe Nggoli, such as symmetry and proportion, which can be used as teaching media in mathematics education.

Image 5. Visualization of Tembe Nggoli

Based on the analysis of the articles, Tembe Nggoli, the traditional woven fabric of the Bima community, contains rich cultural elements that can be integrated into mathematics learning. The most prominent mathematical elements are found in the geometric motifs and number patterns woven into the fabric's structure.

a. Main Motifs (Triangle, Rhombus, and Square in the Center of the Fabric)

The central section of Tembe Nggoli is usually adorned with the main motifs, such as equilateral triangles, rhombuses, and squares. These motifs capture attention and present a combination of two-dimensional shapes that are ideal for teaching geometric properties, such as equal sides, equal angles, perimeter, and area. The presence of these main motifs provides a hands-on learning experience, where students are asked to observe and describe the shapes and their measurements.

b. Fabric Edges (Border/ Waistband Motif) as Repetition and Series Patterns

The edges or waistbands of **Tembe Nggoli** are typically decorated with horizontally repeated patterns resembling a frieze pattern. This pattern can be used to introduce students to arithmetic sequences and series, where they calculate the number of repetitions of a motif and the distance between motifs. Additionally, if these motifs vary in size consistently, teachers can relate them to geometric series.

c. Arrangement of Motif Rows (Reflection and Rotation Patterns)

In some Tembe Nggoli fabrics, the arrangement of motifs demonstrates reflection (mirror symmetry) and rotation. Students can study fold symmetry and rotational symmetry by observing how motifs on one side of the fabric are mirrored on the other side or how motifs are repeated with specific rotations. This makes the learning of geometric transformations more concrete and easier to understand.

d. Filler Ornaments (Composition and Regularity of Patterns)

The filler ornaments between the main motifs and the fabric edges often consist of small lines, dots, or other simple shapes that are neatly arranged and orderly. This arrangement teaches the regularity of patterns, sequence algorithms, and the logic of repetition, which are crucial for developing systematic thinking and problem-solving skills.

e. Entire Fabric (Cultural Meaning and Philosophical Values)

The entire Tembe Nggoli, from the main motifs to the borders and small ornaments, reflects a meticulous process of creation, embodying values of patience, perseverance, and attention to detail. These values can be embedded into mathematics learning, teaching students that solving mathematical problems requires persistence, precision, and resilience, similar to the philosophy behind creating Tembe Nggoli**.**

Several teachers and researchers have developed modules and e-modules that utilize the visual richness and cultural stories embedded in Tembe Nggoli. Through these modules, students are invited to directly study various mathematical concepts such as plane shapes, geometric transformations, sequences, and series, based on the fabric's motifs. This approach makes learning more engaging, contextual, and flexible because it connects with students' daily lives and familiar culture. Moreover, by observing each part of Tembe Nggoli, students are trained to link shapes, patterns, and mathematical concepts with real-world objects around them. This process develops their mathematical connection skills and encourages them to understand that mathematics is not just something found in textbooks but also alive and present in their own culture.

Thus, Tembe Nggoli is not only a source for learning mathematics but also serves as a bridge between abstract concepts and concrete realities in daily life. Finally, learning based on Tembe Nggoli plays an essential role in strengthening cultural identity and pride. By integrating the meanings and values of Tembe Nggoli into the learning process, students gain not only mathematical knowledge but also an appreciation for cultural preservation. They are encouraged to value their ancestral heritage and take pride in being part of a rich and meaningful local culture. This type of learning builds academic skills while also fostering strong character and cultural awareness.

MATHEMATICAL ELEMENTS IN CULTURAL ACTIVITIES AND TRADITIONAL GAMES

Based on the article review, six articles were identified that explore and discuss cultural activities and traditional games in Sasambo culture, along with their ethnomathematical concepts. The following table summarizes the mathematical concepts embedded in cultural activities and traditional games within Sasambo culture, based on the articles that have been analyzed.

Table 6. Exploration Results of Articles on the Mathematical Elements of cultural activities and traditional games

No	Authors (Year)	Article Title	Exploration Results
1	Lalu Muhammad Fauzi et al. (2022)	*Ethnomathematics: Exploration of Mathematics and Cultural Values in the Performing Arts of the Sasak Tribe Perisean*	In the Perisean tradition, mathematical elements are identified in geometric shapes such as the shield (ende) and rattan stick (penjalin), as well as musical instruments. The arena's square shape and the rules of the game reflect logical reasoning, sequences, and strategies that can be utilized in contextual mathematics learning.
2	Diena Frentika & Heru Tri Novi Rizki (2020)	*Geometri dan Pengukuran dalam Permainan Rakyat Kabupaten Sumbawa Barat*	Barapan Kebo contains mathematical concepts such as speed, distance, time, angles, lines, and measurement units. The straight track shape illustrates flat geometric concepts, making it suitable for geometry and measurement learning.
3	Heru Tri Novi Rizki & Diena Frentika (2021)	*Etnomatematika dalam Budaya Barapan Kebo sebagai Inovasi Pembelajaran Matematika*	Barapan Kebo also features concepts of probability, statistics, sets, and numbers, represented through participant classification, scoring systems, and competition structures that reflect mathematical applications in real-world contexts.
4	Asri Fauzi et al. (2023)	*Efektivitas Pembelajaran Berbasis Ethnomathematics dengan Pendekatan Budaya Sasak Ditinjau dari Pemahaman Konsep Matematika*	This study highlights the contextualization of mathematics through Sasak cultural elements, such as traditional houses, crafts, and local games, making learning more meaningful because it connects mathematics to students' cultural experiences.
5	Masjudin et al. (2024)	*Etnomatematika: Eksplorasi Budaya Sasak "Nyongkolan" Sebagai Sumber Belajar Matematika*	The Nyongkolan tradition reveals mathematical elements in songket fabric patterns (plane geometry and transformations), participant formations (sequences and numerical patterns), musical instruments (cylindrical and circular shapes), and distance-time estimation in the procession (algebra and measurement).
6	Asri Fauzi & Ulfa Lu'luilmaknun (2019)	*Etnomatematika pada Permainan Dengklaq sebagai Media Pembelajaran Matematika*	Dengklaq game includes geometric shapes such as squares, triangles, and semicircles. Player movements illustrate angle relationships, cube nets, reflections, mathematical logic, and probability, making this game effective for contextual mathematics learning.

Culture and traditional games of the people of West Nusa Tenggara, particularly among the Sasak and Samawa communities, not only preserve cultural values and local wisdom but are also rich in mathematical elements that can be utilized in education. Through an ethnomathematics approach, various cultural activities and traditional games can be revealed as contextual and meaningful learning media.

One of the highlighted cultural practices is *Perisean*, a traditional agility art of the Sasak people. Behind the sound of traditional musical instruments and the enthusiasm of the *pepadu* (fighters), clear mathematical concepts are embedded. (L. M. Fauzi, Hayati, et al., 2022) describe that the square-shaped *Perisean* arena, measuring 10x10 meters, represents the concept of plane geometry. The circular-shaped shield (*ende*) and the cylindrical rattan stick (*penjalin*) also illustrate spatial geometry. In addition, the game

rules requiring strikes only to the upper body reflect mathematical logic and gameplay strategies, teaching about spatial boundaries and attack tactics.

Furthermore, in the *Barapan Kebo* tradition from West Sumbawa, a wider range of mathematical elements is found. Frentika & Rizki (2020), Rizki & Frentika (2021) explain that in this buffalo race, participants indirectly practice measuring speed, time, and distance. The long, straight racing track can be modeled as a line or plane, while the positioning of the buffalo, jockey, and tools such as *noga* and *kareng* represent lines and angles. Rizki & Frentika (2021) add that grouping the buffaloes based on age into specific classes introduces the concepts of sets and numbers. Additionally, the competition system, which progresses from preliminary rounds to the final, reflects probability and statistical data analysis, making it highly relevant for mathematics education.

Meanwhile, the *Nyongkolan* tradition, a Sasak customary wedding procession, also presents interesting mathematical concepts. (Masjudin et al., 2024) found that the formation of participants in the procession illustrates number patterns and sequences, which can be linked to mathematical topics on patterns and series. The geometric and symmetrical motifs on the *songket* fabric worn by the participants, as well as musical instruments like the *gendang beleq* and *gong*, which are cylindrical and circular in shape, serve as tangible examples of spatial geometry. The estimation of travel time and distance during the procession also provides practical lessons in measurement and estimation, applicable to everyday life.

Additionally, *Dengklaq*, a game popular among Sasak children, contains numerous mathematical concepts. Fauzi & Lu'luilmaknun (2019) explain that the squares, triangles, and semi-circular shapes of the game's grid introduce children to plane geometry. The game's rules, which require players to hop on one foot between specific grid spaces, help develop understanding of angle relationships, cube nets, and involve logic and probability in turn-taking.

Finally, Fauzi & Rahmatih (2023) emphasize that mathematics learning based on Sasak culture, which integrates cultural elements such as games, crafts, and traditions, has been proven effective in improving students' conceptual understanding of mathematics. This approach not only makes mathematics easier to understand but also fosters love and pride for local culture.

From this description, it is clear that the cultural activities and traditional games in West Nusa Tenggara hold rich ethnomathematical potential to be integrated into education. This opens opportunities for teachers and educators to present mathematics in a concrete, contextual, and meaningful way while preserving valuable cultural heritage for future generations.

CONCLUSION AND RECOMMENDATIONS

Based on the literature review conducted, it can be concluded that the Sasambo culture (Sasak, Samawa, and Mbojo) holds great potential as a source of contextual and meaningful mathematics learning. Various cultural forms such as traditional architecture (Bale Tani, Uma Lengge, and Istana Dalam Loka), the Sasak and Tembe Nggoli weaving

arts, as well as cultural activities and traditional games, contain mathematical elements including concepts of plane shapes, solid shapes, patterns, symmetry, geometric transformations, measurement, and problem-solving strategies. The integration of these cultural elements not only enriches students' learning experiences but also strengthens the connection between mathematics and their daily lives, while fostering pride and love for their local cultural heritage.

The following recommendations are provided: there is a need for the systematic development of learning materials based on Sasambo culture, in the form of modules, e-modules, student worksheets, and other contextual and interactive learning media. Furthermore, teacher training on the application of ethnomathematics in mathematics teaching should be strengthened, so that teachers are equipped to integrate the richness of local culture into classroom learning activities. Further research is also recommended to assess the effectiveness of implementing Sasambo culture-based learning at various educational levels to ensure its sustained positive impact on mathematics understanding and the preservation of local culture.

DAFTAR PUSTAKA

Az-Zahra, R., Azkiya, A., Ningtiyas, E., Haerani, S. M., & Farhan, M. (2024). Eksplorasi Konsep Matematika Pada Tembe Nggoli Dan Potensinya Sebagai Sumber Belajar Geometri, Deret Aritmatika Dan Deret Geometri. *E D U P E D I K A: Jurnal Studi Pendidikan Dan Pembelajaran*, *3*(2), 11–21.

Boell, S. K., & Cecez-Kecmanovic, D. (2014). A hermeneutic approach for conducting literature reviews and literature searches. *Communications of the Association for Information Systems*, *34*(1), 257–286. https://doi.org/10.17705/1cais.03412

Castro, R. S. de. (2024). WEAVING THE HARMONY OF CULTURES INTO THE INFINITE TAPESTRY OF. *Revista ARAGE*, *6*(1), 219–230.

Chen, W., & Chen, W. (2025). *Ethnomathematics Projects for Projective Geometry in Distance Learning*. *15*(1). https://doi.org/10.5642/jhummath.XPNZ9572.

Chen, W. H., & Ja'Faruddin. (2021). Traditional Houses and Projective Geometry: Building Numbers and Projective Coordinates. *Journal of Applied Mathematics*, *2021*. https://doi.org/10.1155/2021/9928900

Farhan, M., Apriyanto, M. T., & Hakim, A. R. (2021). Etnomatematika: Eksplorasi Uma Lengge Untuk Pembelajaran Matematika Di Sekolah. *Jurnal Derivat: Jurnal Matematika Dan Pendidikan Matematika*, *8*(2), 98–106. https://doi.org/10.31316/j.derivat.v8i2.1965

Fauzi, A., & Lu'luilmaknun, U. (2019). Etnomatematika Pada Permainan Dengklaq Sebagai Media Pembelajaran Matematika. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *8*(3), 408. https://doi.org/10.24127/ajpm.v8i3.2303

Fauzi, A., & Rahmatih, A. N. (2023). Efektivitas Pembelajaran Berbasis Ethnomathematics Dengan Pendekatan Budaya Sasak Ditinjau Dari Pemahaman Konsep Matematika. *PENDAGOGIA: Jurnal Pendidikan Dasar Volume 3|Nomor 3|Desember 2023 Hal. 167 - 175 Efektivitas*, *3*(2020), 167–175.

Fauzi, A., Rahmatih, A. N., Sobri, M., Radiusman, R., & Widodo, A. (2020). Etnomatematika: Eksplorasi Budaya Sasak sebagai Sumber Belajar Matematika Sekolah Dasar. *JRPM (Jurnal Review Pembelajaran Matematika)*, *5*(1), 1–13. https://doi.org/10.15642/jrpm.2020.5.1.1-13

Fauzi, A., & Setiawan, H. (2020). Etnomatematika: Konsep Geometri pada Kerajinan Tradisional Sasak dalam Pembelajaran Matematika di Sekolah Dasar. *Didaktis: Jurnal Pendidikan Dan Ilmu Pengetahuan*, *20*(2), 118–128. https://doi.org/10.30651/didaktis.v20i2.4690

Fauzi, L. M., Gazali, M., Fauzi, A., Wardi, Z., & Endriana, N. (2022). Realistic Mathematics Education: Building Mathematical Conceptions in Sasak Culture. *Jurnal Math Educator Nusantara Wahana Publikasi Karya Tulis Ilmiah Di Bidang Pendidikan Matematika*, *8*(2), 155–167. https://doi.org/10.29407/jmen.v8i2.18885

Fauzi, L. M., Hanum, F., Jailani, J., & Jatmiko, J. (2022). Ethnomathematics: Mathematical Ideas and Educational Values on the Architecture of Sasak Traditional Residence. *International Journal of Evaluation and Research in Education (Ijere)*, *11*(1), 250. https://doi.org/10.11591/ijere.v11i1.21775

Fauzi, L. M., Hayati, N., Gazali, M., & Fauzi, A. (2022). Ethnomathematics: Exploration of Mathematics and Cultural Values in the Performing Arts of the Sasak Tribe Perisean. *Hipotenusa Journal of Mathematical Society*, *4*(1). https://doi.org/10.18326/hipotenusa.v4i1.7240

Fitriyah, A. T., & Syafi'i, M. (2022). Etnomatematika Pada Bale Lumbung Sasak. *Mosharafa: Jurnal Pendidikan Matematika*, *11*(1), 1–12. https://doi.org/10.31980/mosharafa.v11i1.682

Frentika, D., & Rizki, H. T. N. (2020). Geometri dan Pengukuran dalam Permainan Rakyat Kabupaten Sumbawa Barat. *Jurnal Pendidikan Mipa*, *10*(2), 86–93. https://doi.org/10.37630/jpm.v10i2.346

Islamiati, N., Prabowo, A., & Rosmiati, R. (2024). *Pengembangan Modul Matematika Berbasis Etnomatematika Tembe Nggoli untuk Meningkatkan Pemahaman Konsep Siswa Kelas VII SMPN 1 Dompu*. *4*, 752–762.

Islamiati, N., & Purnamansyah, P. (2024). Pembelajaran Matematika Berbasis Etnomatematika: Kajian Analisis Geometri Rumah Adat "Uma Lengge." *Jurnal Pendidikan Mipa*, *14*(1), 247–252. https://doi.org/10.37630/jpm.v14i1.1458

Isnaniah, I., Imamuddin, M., & Annisa, A. (2023). Ethnomathematics Study: Mathematical Concepts in Bima Weaving Motifs. *AL-ISHLAH: Jurnal Pendidikan*, *15*(3), 3510–3518. https://doi.org/10.35445/alishlah.v15i3.3687

Kusaeri, A., & Pardi, M. H. H. (2019). Matematika dan Budaya Sasak: Kajian Etnomatematika di Lombok Timur. *Jurnal Elemen*, *5*(2), 125–139. https://doi.org/10.29408/jel.v5i2.1044

Mariani, M., Akbar, M. A., Ihsani, B. Y., & Candra, C. (2024). Pembelajaran Kultural Melalui Motif Kain Songket: Analisis Terhadap Karakteristik Masyarakat Suku Sasak. *JIIP - Jurnal Ilmiah Ilmu Pendidikan*, *7*(6), 5764–5773. https://doi.org/10.54371/jiip.v7i6.4542

Masjudin, Suastra, I. W., Bagus, I., & Arnyana, P. (2024). *Etnomatematika : Eksplorasi*

Budaya Sasak " Nyongkolan " Sebagai Sumber Belajar Matematika bahwa matematika tidak hanya bersifat universal tetapi juga dapat dipengaruhi oleh pemahaman konseptual siswa dan memotivasi mereka untuk belajar lebih aktif . *Selai*. *12*(2), 141–158.

Meyundasari, M. D., Hastuti, I. D., Syaharuddin, S., & Mehmood, S. (2024). The geometric concepts of the Istana Dalam Loka traditional house: An ethnomathematics study. *Jurnal Elemen*, *10*(2), 305–323. https://doi.org/10.29408/jel.v10i2.25208

Negara M. N., Malik I., Magfirah R., Sapitri, W. (2024). *E d u p e d i k a*. *3*(2), 1–10.

Novelza, I. D., Yanti, L. W., Rusliah, N., & Sari, M. (2023). Ethnomathematics Exploration in the Process of Making Traditional Lemang Food as a Cultural Custom of Kerinci. *Logaritma : Jurnal Ilmu-Ilmu Pendidikan Dan Sains*, *11*(1), 1–10. https://doi.org/10.24952/logaritma.v11i1.6659

Nurbaeti, Sowanto, Mikrayanti, Sarbudin, & Edison. (2019). Ethnomathematics on Woven Fabric (Tembe Nggoli) of Mbojo tribe society. *Journal of Physics: Conference Series*, *1280*(2). https://doi.org/10.1088/1742-6596/1280/2/022049

Radiusman, R., & Juniati, D. (2022). Kajian Etnomatematika Kain Tenun Lombok Berdasarkan Pola Geometri Wallpaper Dan Pola Geometri Frieze. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *11*(3), 1909. https://doi.org/10.24127/ajpm.v11i3.5329

Rizki, H. T. N., & Frentika, D. (2021). Etnomatematika Dalam Budaya Barapan Kebo Sebagai Inovasi Pembelajaran Matematika. *Jurnal Riset Dan Inovasi Pembelajaran*, *1*(2), 252–264. https://doi.org/10.51574/jrip.v1i2.98

Rohviana, B. A., Habib, M., & Pardi, H. (2024). Etnomatematika Pada Budaya Sasak di Rumah Adat Bale Tani Desa Rembitan Sebagai Sumber Belajar Matematika. *Teaching and Learning Journal of Mandalika*, *5*(2), 197–207.

Rosinansis, R., Herman, T., & Hasanah, A. (2022). Improving Mathematical Meaningful Abilities of Native Students in The Pelabuhanratu Region Using an Ethnomathematics Approach. *QALAMUNA: Jurnal Pendidikan, Sosial, Dan Agama*, *14*(1), 405–418. https://doi.org/10.37680/qalamuna.v14i1.4167

Sabilirrosyad, S. (2018). Ethnomathematics Sasak: Eksplorasi Geometri Tenun Suku Sasak Sukarara Dan Implikasinya Untuk Pembelajaran. *Jurnal Tatsqif*, *14*(1), 49–65. https://doi.org/10.20414/jtq.v14i1.21

Safitri, A. H. I., Novaldin, I. D., & Supiarmo, M. G. (2022). Uma Lengge Traditional Building as a Source of Ethnomathematics-Based Mathematics Learning Implementation. *Jurnal Studi Pendidikan*, *1*(1), 45–52.

Sari, N. (2022). Development Mathematics Realistic Education Worksheet Based on Ethnomathematics in Elementary School. *Phenomenon : Jurnal Pendidikan MIPA*, *12*(1), 77–89. https://doi.org/10.21580/phen.2022.12.1.10853

Schmeisser, B. (2013). A systematic review of literature on offshoring of value chain activities. *Journal of International Management*, *19*(4), 390–406. https://doi.org/10.1016/j.intman.2013.03.011

Septiana, W., Hikmah, N., Wulandari, N. P., & Prayitno, S. (2023). Eksplorasi

Etnomatematika pada Motif Kain Tenun Desa Sukarara dan Implikasi dalam Pembelajaran Matematika. *Jurnal Ilmiah Profesi Pendidikan*, *8*(3), 1725–1736. https://doi.org/10.29303/jipp.v8i3.1569

Simamora, R. E., Saragih, S., & Hasratuddin, H. (2018). Improving Students' Mathematical Problem Solving Ability and Self-Efficacy through Guided Discovery Learning in Local Culture Context. *International Electronic Journal of Mathematics Education*, *14*(1), 61–72. https://doi.org/10.12973/iejme/3966

Sowanto, & Mulyadin, E. (2019). Developing of teaching materials for junior high school students based on ethnomathematics on traditional woven cloth (Tembe Nggoli) of Mbojo tribe. *Journal of Physics: Conference Series*, *1280*(4). https://doi.org/10.1088/1742-6596/1280/4/042044

Sutarto, S., Ahyansyah, A., Mawaddah, S., & Hastuti, I. D. (2021). Etnomatematika: Eksplorasi Kebudayaan Mbojo Sebagai Sumber Belajar Matematika. *JP2M (Jurnal Pendidikan Dan Pembelajaran Matematika)*, *7*(1), 33–42. https://doi.org/10.29100/jp2m.v7i1.2097

Sutarto, S., Hastuti, I. D., & Supiyati, S. (2021). Etnomatematika: Eksplorasi Transformasi Geometri Tenun Suku Sasak Sukarara. *Jurnal Elemen*, *7*(2), 324–335. https://doi.org/10.29408/jel.v7i2.3251

Turmuzi, M., Suharta, I. G. P., Astawa, I. W. P., & Suparta, I. N. (2024). Meta-analysis of the effectiveness of ethnomathematics-based learning on student mathematical communication in Indonesia. *International Journal of Evaluation and Research in Education* , *13*(2), 903–913. https://doi.org/10.11591/ijere.v13i2.25475

Wahyuni, S., & Kusaeri, A. (2024). Analisis Kemampuan Berpikir Kritis dan Berpikir Logis Siswa dalam Memecahkan Masalah Matematis Berbasis Etnomatematika Kain Tenun Tembe Nggoli Bima. *Kognitif: Jurnal Riset HOTS Pendidikan Matematika*, *4*(1), 281–297. https://doi.org/10.51574/kognitif.v4i1.1464

Widada, W., Herawaty, D., Anggoro, A. F. D., Yudha, A., & Hayati, M. K. (2019). *Ethnomathematics and Outdoor Learning to Improve Problem Solving Ability*. *295*(ICETeP 2018), 13–16. https://doi.org/10.2991/icetep-18.2019.4

Zuhri, Z., Dewi, S. V., Kusuma, J. W., Rafiqoh, S., Mahuda, I., & Hamidah, H. (2023). Implementation of Ethnomathematics Strategy in Indonesian Traditional Games as Mathematics Learning Media. *Journal of Innovation in Educational and Cultural Research*, *4*(2), 294–302. https://doi.org/10.46843/jiecr.v4i2.613