

A CULTURAL SEMIOTICS STUDY: ETHNOMATHEMATICAL EXPLORATION IN GEOMETRY MATERIALS THROUGH CULTURAL SITE IN ACEH

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Abstract

This study aims to interpret *Rumoh Aceh* as one of the historical artifacts through an ethnomathematical approach to the focus of the material, namely geometry in elementary school, and to find out the philosophical meaning behind the architecture and ornaments of *Rumoh Aceh* through a cultural semiotic review which was a type of semiotics from the qualitative content analysis method devoted to the semiotic study in certain cultures. This study referred to secondary sources in journal articles, book and document retrieval through relevant websites to a cultural site in Aceh. Furthermore, the primary sources were obtained from observations about *Rumoh Aceh* and traditional leaders in Aceh during the archipelago module activities. Determination of the data validity from this study was done by triangulation of sources utilizing cross-check. The results of this study reported that several ethnomathematical concepts in the *Rumoh Aceh* building could be taught in geometry material in elementary school, including; (1) the concept of the position of an angle concerning a line, (2) the concept of a plane figure (square), (3) the concept of a plane figure (rectangle), (4) the concept of a plane figure (a right triangle) and the Pythagorean principle, (5) the concept of a plane figure (isosceles triangle), (6) the concept of a plane figure (trapezoid), (7) the concept of a flat rhombus, (8) the concept of a spatial figure (tube), and (9) the concept of reflection, tessellation, and translation which might be required to be taught on the introduction of basic concepts at the elementary school level (high grade).

Keywords: cultural semiotics; ethnomathematical; geometry; mathematics

Abstrak

Penelitian ini bertujuan untuk menginterpretasikan *Rumoh Aceh* sebagai salah satu artefak bersejarah melalui pendekatan etnomatematika pada fokus materi yaitu geometri di Sekolah Dasar serta mengetahui makna filosofis di balik arsitektur dan ornamen *Rumoh Aceh* melalui tinjauan semiotik kultural. Semiotik tersebut merupakan salah satu jenis semiotik dari metode *qualitative content analysis* yang dikhususkan pada studi metode semiotik pada budaya tertentu. Penelitian ini merujuk pada sumber sekunder berupa artikel jurnal, buku maupun pengambilan dokumen melalui website yang relevan dengan situs kebudayaan di Aceh dan sumber primer yang diperoleh dari hasil pengamatan seputar *Rumoh Aceh* bersama dengan ketua adat di Aceh selama kegiatan modul nusantara. Penentuan keabsahan data dari penelitian ini yaitu dengan triangulasi sumber dengan cara *cross-check*. Adapun hasil dari penelitian ini yaitu terdapat beberapa konsep etnomatematika pada bangunan *Rumoh Aceh* yang dapat diajarkan dalam materi geometri di Sekolah Dasar diantaranya yaitu ; (1) Konsep kedudukan sudut terhadap garis, (2) Konsep bidang datar (persegi), (3) Konsep bidang datar (persegi panjang), (4) Konsep bidang datar (segitiga siku-siku) dan prinsip *Phytagoras*, (5) Konsep bidang datar (segitiga sama kaki), (6) Konsep bidang datar (trapesium), (7) Konsep bangun datar belah ketupat, (8) Konsep bidang ruang (tabung) dan (9) Adanya konsep refleksi, teselasi dan translasi yang mungkin perlu diajarkan hanya pada pengenalan konsep dasar saja di jenjang Sekolah Dasar (kelas tinggi).

Kata Kunci: etnomatematika; geometri; matematika; semiotik kultural

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Introduction

According to data from the Trend in International Mathematics and Science Study (TIMSS), it was noted that Indonesia was listed as one of the countries that became the TIMSS object with an average score that tended to become low, which only able to understand up to basic concepts and has not reached the stage of communicating, and integrating various topics, especially implementing complex and abstract concepts in mathematics learning (Hadi & Novaliyosi, 2019). Even though the current curriculum supports achievements in learning mathematics, in this case, the teacher is still the leading actor in these achievements (Nurafni et al., 2018). Several cases were found because learning mathematics so far still seemed rigid (Redasi, 2021). Besides, in discussing the material, the teacher only used the lecture method with only minor involvement of student contributions. Additionally, learning tools so far were more focused on cognitive aspects, so psychomotor aspects such as process skills were still underdeveloped (Andriyani & Kuntarto, 2017).

Literally, mathematics is one of the forms of culture that can be integrated with every element of the layers in people's lives (Destrianti, 2019). Culture can be interpreted as the interaction of the order of life together (Bahar & Teng, 2017). Culture is related to reason and can also be interpreted as all the works, tastes, and creations of humans or society (Rosana, 2017). Therefore, undoubtedly, learning mathematics will have an element of meaning and more contribution if the learning process is associated with things based on local wisdom, which will become a bridge for mathematical thinking logic that continues to develop in life in the surrounding environment with concepts from the mathematical theory that taught in school (Mawaddah, 2017) and it can be done by observing cultural sites in an area and then integrating one approach as its solution, such as an ethnomathematical approach. Facts from the preliminary research conducted by (Adilaturrahmah, 2022) with the title "Application of Realistic Mathematics Approach to Flat Building Material through Kuta Village Culture" has proven that by implementing cultural-based real mathematics learning in West Java, namely Kuta Village Culture, can make it easier for students to know and invite to preserve the surrounding culture in Ciamis Regency. Based on research by (Mahpudin & Yuliati, 2019) with the title "The Role of Local Culture on Literacy Matematics of Elementary School Students in Cirebon", the result showed that the Cirebon area with its local culture that is still attached to the community has a fairly high potential in helping to developed mathematical literacy skills by utilizing cultural elements there and by being implemented into mathematics learning materials, the level of student understanding becomes higher, this is in terms of spatial literacy, numeracy, and quantitative literacy skills and through these activities, students' awareness in appreciating the cultural wealth in the surrounding environment will also arise. And the next preliminary research from (Sarwoedi et al., 2018) with the title "The Effectiveness of Ethnomathematics in Improving Students' Mathematical Comprehension Ability", the result showed that ethnomathematics-based mathematics learning effectively adds to students' thinking ability. This is evidenced from the results of research and several indicators of students' comprehension ability which shown the influence of ethnomathematics on students' mathematical comprehension ability, namely in identifying, translating, interpreting symbols, understanding and applying mathematic ideas, making an exploration (estimate) and in solving mathematical problems. Based on its definition, ethnomathematics is mathematics based on a cultural perspective, not only on ethnicity or tribe (Abi, 2017). Ethnomathematics-based learning is considered to have high urgency because it aims to re-instill the character values and foster a sense of pride in the local culture, which may have been fading due to technological

advances in the times (Fauzi & Lu'luilmaknun, 2019). It illustrates that mathematics is closely related to the surrounding culture, both directly and indirectly (Kurino & Rahman, 2022).

One of the cultural sites learned in this article was a cultural sites in the Aceh area, namely *Rumoh Aceh*. *Rumoh Aceh* is a traditional house owned by the Acehnese people, which is still preserved by the Acehnese people in *Lubuk Sukon Village, Ingin Jaya Sub-district, Aceh Besar District* (Maulana et al., 2018). *Rumoh Aceh*, one of the cultural artifacts, has sustainable and environmentally friendly and local wisdom values in people's lives in Aceh (Kevin et al., 2021). In the building structure, *Rumoh Aceh* has much uniqueness that can be viewed from the mathematical concepts (geometry) perspective. The previous study on the ethnomathematics of geometry material in *Rumoh Aceh* had been done (Saputra et al., 2022) and (Yudanti et al., 2022), but did not use a semiotic approach, especially cultural semiotics and in the discussion of these studies not only focused on geometry material, but the mathematics materials are discussed widely, while in this study it is devoted to learning geometry in elementary school by adjusting to research problems and research objectives that will be explained. Therefore, it underlay the researcher to raise the discussion into an article of study to find out more about the philosophical meaning of the *Rumoh Aceh* ornaments through the study of one type of semiotics. This study aims to interpret *Rumoh Aceh* as one of the historical artifacts through an ethnomathematical approach to the focus of the material, namely geometry, and to find out the philosophical meaning behind the architecture and ornaments of *Rumoh Aceh* through a cultural semiotic review. And this research has urgency as a guide for teachers to develop culture-based teaching materials, in this research, especially for geometry material. Therefore, the research problems in this study include; what geometric concepts were found in the *Rumoh Aceh* ornaments through an ethnomathematical approach? Besides, what was the philosophical meaning behind the architecture and *Rumoh Aceh* ornaments through a cultural semiotics review?

Research Method

This study used qualitative content analysis methods, namely semiotics, especially cultural semiotics. By definition, qualitative content analysis was a method that had many unique attributes associated with all qualitative study methods, and these attributes extended to the primary considerations in all qualitative study designs (Roller, 2019). Furthermore, semiotics could be defined as an analytical method to examine signs in the context of scenarios, images, texts, and scenes into something that could be interpreted (Riwu & Pujiati, 2018). Meanwhile, the type of semiotics used in this study was cultural semiotics, namely semiotics devoted to studying semiotic methods in certain cultures. People as social beings have had specific traditional ways preserved from generation to generation. The custom was included in the community as a system that used certain symbols/signs to become an identity or differentiation from other communities (Ibrahim & Ashadi, 2020).

This study referred to secondary sources in journal articles, book and document retrieval through relevant websites to cultural sites in Aceh and primary sources obtained from observations about *Rumoh Aceh* with traditional leaders during the archipelago module activities (held in October 3rd, 2021). Determination of the validity of the data from this study was done by using triangulation of sources through *cross-check*. This study aims to interpret *Rumoh Aceh* as one of the historical artifacts through an ethnomathematical approach to obtain information that could be used in analyzing problems and obtaining solutions. The stages in the study were first determining the study problem, which was the initial stage of study where the researcher looked for gaps in a study. Second, compiling a framework, the researcher made a framework

from the case being studied to find results that could answer the formulation of the problem that has been made. Third, the researcher developed a methodology as the basis for the study methods during the study process. Fourth, doing data analysis, the researcher used data analysis techniques that aimed to explain related data so that it was easy to understand to determine conclusions, and the last stage was data interpretation. At this stage, unifying the analysis results was made in the form of other special provisions (Fadli, 2021)

Results and Discussion



Figure. 1 *Rumoh Aceh*

Many things can be observed through the mathematical concept of geometry material, especially in elementary school with cultural objects in this study, namely *Rumoh Aceh* with its unique building model. Explanation of the meaning of the architecture and ornaments of *Rumoh Aceh* can be seen in **Table. 1** as follows:

Table.1 *The philosophical meaning of the architecture and Rumoh Aceh ornaments, as well as a review of ethnomathematical concepts in geometry material in elementary*

No.	Ethnomathematics Elements Image	Cultural Semiotics	Mathematical Concepts
1.		The form of wisdom that appeared in the architecture of <i>Rumoh Aceh</i> was in response to the nature and beliefs (religiosity) of the Acehnese people. <i>Rumoh Aceh</i> was located in a position stretching from east to west, and it was believed that the <i>Rumoh Aceh</i> building tended to face west which was the direction of the Qibla for prayer. Besides that, natural factors could be indicated by the wind direction in Aceh, which blew from east to west or vice versa was also a factor in the orientation	In determining the position of <i>Rumoh Aceh</i>, which adjusted the Qibla direction, there was a concept regarding the angle to the line (between the Qibla direction and the cardinal directions).

Figure. 2 *Position of Stairs in Rumoh Aceh*

2.

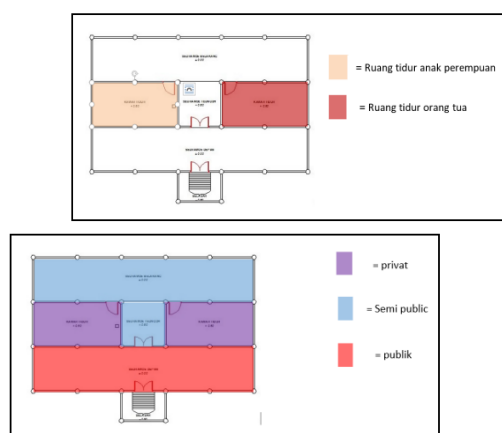


Figure. 3 Rumoh Aceh Room Plan

of the *Rumoh Aceh* building, which stretched from east to west.

The location of girls room was in the middle of the room (*Tunggai*). Each room was named *Rumoh Inong* and *Anjong*. The *Rumoh Inong* was a particular room for the princess consort, and *Rumoh Anjong* was a particular room for girls. *Rumoh Inong* was located on the right (west), and *rumoh anjong* was located on the left (east)

In the schematic drawing of the determination of the room, the concept of flat geometry could be found, namely in square and rectangular shapes, such as in determining the area of squares and rectangles and the total circumference of these shapes.

Public, semi-public, and private spaces were located in the middle and back. Then, the public spaces are called *Rambal*. The middle of this room was an empty room deliberately made for people to pass from the front porch to the back without disturbing the rooms (*Rumoh Inong* and *Rumoh Anjong*). Judging from the aspect of the room arrangement, it was clear that the Acehnese people respected the women's dignity.

3.

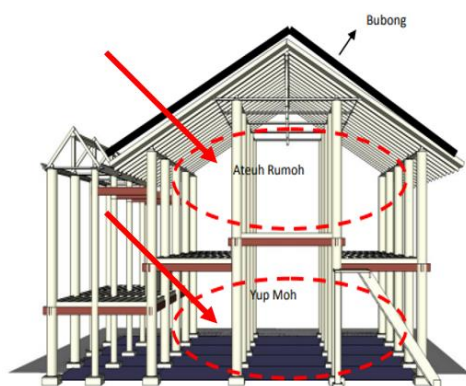


Figure. 4 Construction of Rumoh Aceh building

Rumoh Aceh had a sturdy and earthquake-resistant construction. *Rumoh Aceh* had a building that resembled a stage. It was done as a precautionary measure for disasters such as floods in the future. The upper room was called *Ateuh Rumoh*. Meanwhile, the lower hallway of *Rumoh Aceh* was called *Yup Moh*. The roof on *Rumoh Aceh* was called *Bubong*. Furthermore, the part

As shown in the construction of the *Rumoh Aceh* building, mathematical concepts could be found in rectangular, triangular, and trapezoidal shapes.

4.



Figure. 5 Roof and Serabung Rumoh Aceh

that united the left and right *Bubong* was called *Perabung*.

The roof of the *Rumoh Aceh* was made of Rumbia leaves woven by the Acehnese people. Acehnese people used Rumbia leaves because they gave a cool and light impression. The Rumbia leaves were tied together with the *taloe pawai*. Therefore, when an unexpected disaster occurred, they usually simplified cut the ties of the *taloe pawai*.

On the roof of *Rumoh Aceh*, the concept of flat geometry was found, namely isosceles triangle and right triangle for the roof parts and *Rumoh Aceh* roof. In the concept of a right triangle, the *Pythagorean* principle was discussed. In the *serabung* ornaments of *Rumoh Aceh*, the concept of reflection of the *serabung Rumoh Aceh* was also found.

5.



Figure. 6 Pillars of Rumoh Aceh

The pillars that supported the building of *Rumoh Aceh* were arranged without the help of a spike. It aimed to avoid the danger of sharp objects if the building experienced problems such as collapsing and others, both caused by natural and non-natural disasters.

On the pillars of *Rumoh Aceh*, there was a concept of spatial geometry, namely the tube. Then, the shape of the tube space could be determined related to the volume and surface area of the wake.

6.



Figure. 7 seuramoë keue and seuramoë likot rooms

Seuramoë Keue and *Seuramoë Likot* rooms were two inches further down from the central room (*Tunggai*). The two rooms were of the same height; therefore, a tiny staircase was placed between the doors of *Seuramoë Keue* and *Seuramoë Likot*.

In the right and left side rooms (*Seuramoë keue* and *Seuramoë likot*) from *Rumoh Aceh*, the concept of flat geometry could be found, namely the plane figure of the trapezoid. Thus, it could be determined related to the area and perimeter of the wake.

7.

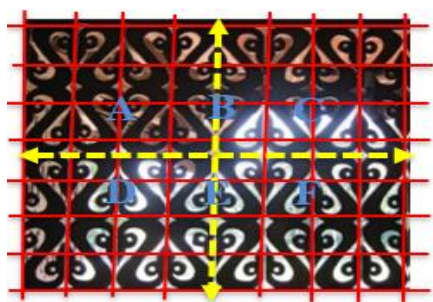


Figure. 8 *Tulak Angen's sculptural motif*

The *Tulak Angen* carving was made by going through carving on the boards or wood of the house's walls directly and formed with various variations. It showed that the Acehnese people had a high artistic spirit. Furthermore, the interconnected carvings illustrated that the Acehnese had strong brotherhood ties by upholding the value of togetherness. It was stated in the Acehnese proverb, "*meunye buet ha mupakat, lampoj jeurat tapeungala*", which meant "if we agreed, then the graveyard could be pawned." *Tulak Angen* was made because there were often strong winds in Aceh from east to west and vice versa, so *Tulak Angen* was made by facing east and west.

In the engraving of *Rumoh Aceh*, the concept of tessellation/tiling was found. Each motif was connected to the other with no overlap and no gaps between the patterns.

8.



Figure. 9 *Flora and Fauna Motifs in Rumoh Aceh*

Pictures of plants in the *Flora* motif included roots, flowers, stems, and leaves. *Flora* motifs could be found on walls, stairs, and windows. On the *Fauna* motif, there were poultry pictures which were animals that were usually kept by Acehnese, such as turtledoves and pigeons.

In the *Rumoh Aceh flora* and *fauna* motifs, everyone could find the concept of flat geometry from squares, rectangles, and right triangles. Based on this motif, people could learn about the area and circumference of each of these plane figures.

9.

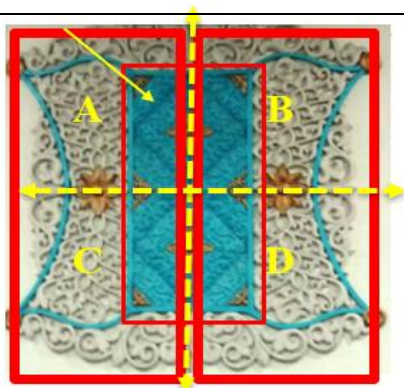


Figure. 10 Rumoh Aceh Carving Motif

The *Rumoh Aceh* carving motif had bright colors and plant motifs as a symbol of coolness, warmth, and a symbol of fertility. Again, this motif had nothing to do with any myth.

In the *Rumoh Aceh* carving motif, people could find the geometric concept of plane figures of rhombus and rectangle, where the area and perimeter of each shape could be determined. In this motif, it could be found the concept of translation (as a basic introduction only).

10.



Figure. 11 Lumbung Padi, Krong Pade.
Beurandong

Krong Pade/ paddy barn was located under *Rumoh Aceh*. This object was usually used as a means of livelihood for Acehnese residents. This paddy barn had a function as a storage place for paddy. Most residents in Aceh worked as farmers, so almost all *Rumoh Aceh* had paddy granaries (*Keupok Padee*).

In the paddy barn from *Krong Pade*, people could find the geometric concept of the space figure on the tube, which indeed could be identified in terms of its surface area and volume.

Conclusion

Based on the analysis and discussion results, it could be concluded that there was an ethnomathematical concept in the *Rumoh Aceh* building that could be taught in geometry materials in elementary school. In this study, there were several basic concepts of ethnomathematical-based geometry material found in *Rumoh Aceh* and its ornaments so that they could be applied to the elementary (higher grade) level, including; (1) The concept of angular position with respect to the line could be found in determining the position of *Rumoh Aceh*; (2) The concept of a (square) plane figure was found in the *Rumoh Aceh* room plan and floral and fauna motif frames; (3) The concept of a (rectangular) plane figure was also found on the room plan of *Rumoh Aceh*, the construction of *Rumoh Aceh*, and *flora* and *fauna* motifs; (4) The concept of a plane figure (right triangle) and the *Pythagorean* principle were found on of the roof and the roof of *Rumoh Aceh* and the construction of *Rumoh Aceh*; (5) The concept of a flat plane (isosceles triangle) was found on the roof and *Rumoh Aceh* roof; (6) The concept of a flat plane (trapezoid) was found in the *Seuramoe keue* and *Seramoe likot* sections (including the construction of *Rumoh Aceh*); (7) The concept of a plane figure rhombus was found on the *Rumoh Aceh* carving motif; (8) The concept of the space figure (tube) was found on the pillars of *Rumoh Aceh* and the paddy barn/*Krong Pade*; (9) furthermore, the concepts of reflection,

tessellation, and translation were obtained from the roof and *serabung* motifs of *Rumoh Aceh*, *Tulak Angen*, and also the carving motifs on *Rumoh Aceh* which might be taught only in the introduction of basic concepts at the elementary school level (higher grade) because it was necessary to know to then studied at the next level. Related to further research in order to be able to develop this material through learning in elementary school, especially at the higher grade level.

References

- Abi, A. M. (2017). Integrasi Etnomatematika Dalam Kurikulum Matematika Sekolah. *JPMI (Jurnal Pendidikan Matematika Indonesia)*, 1(1), 1. <https://doi.org/10.26737/jpmi.v1i1.75>
- Adilaturrahmah, F. (2022). Penerapan Pendekatan Matematika Realistik Pada Materi Bangun Datar Melalui Kebudayaan Kampung Kuta. *Jurnal Gantang*, 6(2), 125–132. <https://doi.org/10.31629/jg.v6i2.3503>
- Andriyani, & Kuntarto. (2017). Etnomatematika : Model Baru. *Jurnal Gantang*, II(2), 133–144. <http://ojs.umrah.ac.id/index.php/gantang/index>
- Bahar, H. M., & Teng, A. (2017). Filsafat Kebudayaan Dan Sastra (Dalam Perspektif Sejarah). *Jurnal Ilmu Budaya*, 5(1), 2354–7294.
- Destrianti, S. (2019). Etnomatematika dalam Seni Tari Kejei Sebagai Kebudayaan Rejang Lebong. *Jurnal Equation: Teori Dan Penelitian Pendidikan Matematika*, 2(2), 116. <https://doi.org/10.29300/equation.v2i2.2316>
- Fadli, M. R. (2021). Memahami desain metode penelitian kualitatif. *Humanika*, 21(1), 33–54. <https://doi.org/10.21831/hum.v21i1.38075>
- Fauzi, A., & Lu'luilmaknun, U. (2019). Etnomatematika Pada Permainan Dengklag Sebagai Media Pembelajaran Matematika. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 8(3), 408. <https://doi.org/10.24127/ajpm.v8i3.2303>
- Hadi, S., & Novaliyosi. (2019). TIMSS Indonesia (Trends in International Mathematics and Science Study). *Prosiding Seminar Nasional & Call For Papers Program Studi Magister Pendidikan Matematika Universitas Siliwangi*, 562–569.
- Ibrahim, M. L., & Ashadi, A. (2020). Kajian Konsep Arsitektur Semiotik Pada Bangunan Gedung Pertunjukan. *Jurnal Arsitektur ZONASI*, 3(3), 272–281. <https://doi.org/10.17509/jaz.v3i3.25018>
- Kevin, M. A., Fuady, M., Izziah, Wulandari, E., & Dewi, C. (2021). Green structure and green technology in preserving traditional architecture of Rumoh Aceh. *IOP Conference Series: Earth and Environmental Science*, 881(1), 012036. <https://doi.org/10.1088/1755-1315/881/1/012036>
- Kurino, Y. D., & Rahman. (2022). Eksplorasi Etnomatematika Rumah Adat Panjalin pada Materi Konsep Dasar Geometri di Sekolah Dasar. *Jurnal Cakrawala Pendas*, 8(1), 268–275.
- Mahpudin, M., & Yuliati, Y. (2019). Peran Budaya Lokal Terhadap Literasi Matematika Siswa Sekolah Dasar di Cirebon. *Proceedings of The ICECRS*, 2(1), 287–292. <https://doi.org/10.21070/piccrs.v2i1.2402>
- Maulana, I., Akmal, A., & Yulika, F. (2018). Estetika Ornamen Rumoh Aceh Lubuk Sukon

- Kecamatan Ingin Jaya Kabupaten Aceh Besar. *Gorga: Jurnal Seni Rupa*, 7(2), 205. <https://doi.org/10.24114/gr.v7i2.11067>
- Mawaddah, S. (2017). Mengembangkan Kemampuan Berpikir Logis dengan Pendekatan Etnomatematika. *Prosiding Seminar Nasional Pendidik Dan Pengembang Pendidikan Indonesia Dengan Tema "Membangun Generasi Berkarakter Melalui Pembelajaran Inovatif,"* 501–511.
- Nurafni, Siswanto, R. D., & Azhar, E. (2018). Development of geometry materials based on scientific approach for junior high school students. *Journal of Physics: Conference Series*, 948(1). <https://doi.org/10.1088/1742-6596/948/1/012002>
- Redasi, L. (2021). Penerapan Model Pembelajaran Kooperatif Tipe Pair Check untuk Meningkatkan Hasil Belajar Matematika Siswa Kelas V Sekolah Dasar. *Journal of Education Action Research*, 5(4), 453. <https://doi.org/10.23887/jear.v5i4.40036>
- Riwu, A., & Pujiati, T. (2018). Analisis Semiotika Roland Barthes pada Film 3 Dara. *Deiksis*, 10(03), 212. <https://doi.org/10.30998/deiksis.v10i03.2809>
- Roller, M. R. (2019). A quality approach to qualitative content analysis: Similarities and differences compared to other qualitative methods. *Forum Qualitative Sozialforschung*, 20(3). <https://doi.org/10.17169/fqs-20.3.3385>
- Rosana, E. (2017). Dinamisasi Kebudayaan dalam Realitas Sosial. *Al-AdYaN*, 12(1), 16–30.
- Saputra, E., Mirsa, R., Yanti, P. D., Wulandari, & Husna, A. (2022). *EKSPLORASI ETNOMATEMATIKA PADA ARSITEKTUR RUMOH ACEH Universitas Malikussaleh , Lhokseumawe , Indonesia Abstrak PENDAHULUAN Kebudayaan tidak bisa terlepas dari kehidupan manusia , karena dalam aktivitas hidup keseharian manusia hampir selalu melibatkan di. 11(1), 703–717.*
- Sarwoedi, Marinka, D. O., Febriani, P., & Wirne, I. N. (2018). Efektifitas Etnomatematika dalam Meningkatkan Kemampuan Pemahaman Matematika Siswa. *Jurnal Pendidikan Matematika Raflesia*, 03(02), 171–176. <https://ejournal.unib.ac.id/index.php/jpmr/article/view/7521>
- Yudanti, E., Satiti, Y. E. J. R., & Angeline, M. I. (2022). Eksplorasi Etnomatematika Terkait Aktivitas Fundamental pada Rumoh Aceh. *Prisma, Prosiding Seminar Nasional Matematika*, 5, 234–243.