International Journal of Multicultural and Multireligious Understanding

http://ijmmu.com
editor@ijmmu.com
ISSN 2364-5369
Volume 12, Issue 6
June, 2025
Pages: 376-388

Ethnomathematics Based Comics of Al-Akbar Mosque Surabaya for Learning Plane Shapes

Arva Putri Salsabila S; Via Yustitia; Susilohadi

Program Studi Pendidikan Guru Sekolah Dasar, Universitas PGRI Adi Buana Surabaya, Indonesia

http://dx.doi.org/10.18415/ijmmu.v12i6.6774

Abstract

Mathematics is one of the main subjects that has an important position in education, one of the materials in elementary school mathematics lessons for grade II is flat shapes. However, many students still view metamathematics as an abstract and difficult to understand subject. So there needs to be innovation to increase student motivation and learning outcomes, namely combining ethnomathematics with comic learning media. The purpose of this development research is (1) to describe the process of developing ethnomathematics-based comics on data geometry material; (2) to determine the feasibility of the results of developing ethnomathematics-based comics on flat geometry material; (3) To determine students' responses to ethnomathematics-based comics on flat geometry material. This study uses the Research and Development (R&D) method. The development process follows the 4D model which is only limited to 3 stages, namely, Define, Design, and Develop. Data collection methods use interviews, questionnaires, and documentation. Data analysis techniques use descriptive analysis to describe the process and descriptive quantitative analysis to determine the feasibility of the product. The results of the study indicate the feasibility of ethnomathematics-based comic products for learning flat shapes in elementary school class II from the validation results of several experts including validation by material experts obtaining an average value of 95% with the criteria of "Very Feasible", validation by media experts obtaining an average value of 81.8% with the criteria of "Very Feasible", validation by language experts obtaining an average value of 91.6% with the criteria of "Very Feasible", and student responses at SDN Ngagelrejo I/396 Surabaya obtaining an average value of 92.91% with the criteria of "Very Feasible".

Keywords: *Etnomatematika, Comic Book, Flat Building Materials*

Introduction

Mathematics as one of the main subjects that has an important position in education, considering its existence which is always used in various important exams since the level of education. Flat shapes are one of the mathematics learning materials in Elementary School class II. Students as the party who study mathematics in school, they still often view mathematics as an abstract and difficult subject to understand.

OECD, 2023 in (Pramulia, 2025) Based on PISA findings, the numeracy and literacy skills of Indonesian students are still below the global average and lag behind neighboring countries, such as Singapore, Malaysia, and Thailand. In improving students' numeracy literacy skills in mathematics learning, it is necessary to apply learning methods that create an interesting learning environment for students, avoid boredom, and at the same time, improve their understanding of the material and numeracy literacy skills. Because appropriate learning methods and processes have a major impact on students' learning success. The use of monotonous and less innovative learning methods can hinder students' understanding of the material, especially in mathematics lessons. Therefore, effective learning methods must create a fun learning environment for students, prevent boredom, and at the same time, improve their understanding of the material and numeracy literacy skills. It is hoped that innovation in learning methods will optimize students' potential in understanding the material being taught. The existence of innovation in learning methods is expected to improve students' understanding of the material and numeracy literacy skills, as well as improve the quality of education in Indonesia (Indonesia & Depan, 2023).

Learning media is one of the methods or tools used in the teaching and learning process. This is done to stimulate learning patterns in order to support the success of the teaching and learning process so that teaching and learning activities can be effective in achieving the desired goals (Setiawan et al., 2021). According to Syaiful Bahri Djamarah and Aswan Zain dalam (Haryani, 2021) Learning media is any tool that can be used to convey messages to achieve learning objectives.

One of the indicators of achievement in the field of education and culture in Indonesia is success in building literacy. Literacy according to the National Institute for Literacy provides an understanding of an individual's ability to read, write, count, and speak, as well as solving work, family, and community problems, or responding to their environment. Individuals can read the world by interpreting literacy. One way to make mathematics learning more interesting and contextual is to use an ethnomathematics approach. Ethnomathematics is the science that studies the relationship between mathematics and culture. The ethnomathematics approach can be used to connect mathematical concepts with students' daily lives, so that they can more easily understand and learn them.

Ethnomathematics, which comes from the words "Ethno", "Mathema", and "Tics". "Ethno" means something that refers to the socio-cultural context, such as customs, community culture, myths, symbols in society and so on, while "Mathema" is interpreted as explaining, knowing, doing activities, measuring and concluding, while "Tics" comes from the word techne which means Technique (Nova & Putra, 2022). Ethnomathematics is a mathematical study in the form of a study of cultural forms (ideas, activities, or cultural objects) that have become the characteristics of a particular community group (Andriono, 2021). According to Neni Mariana, mosque architecture can be associated with mathematics learning, especially in elementary schools based on ethnomathematics. Al-Akbar Mosque is one of the mosques that can be analyzed and studied using mathematical concepts, namely geometry, because the structure of the building is related to geometry (Ana & Mariana, 2022). Based on research by Ana and Mariana in 2022 in (Shidqi & Yustitia, 2024), found a connection between the Al-Akbar National Mosque in Surabaya and the concept of geometry. The architecture of this mosque has many flat geometric shapes, including rectangles and squares, as well as three-dimensional shapes such as cubes, blocks, pyramids, cylinders, hemispheres, and cones.

Mathematics and culture are two elements in life that are interconnected. Indirectly, the daily life activities of society must be related to mathematics (Studi et al., 2023). With the existence of ethnomathematics-based comic media, students can become more familiar with the culture around them (Safika Nurazlaila, 2023). Ethnomathematics-based comic media is a learning media that combines mathematical concepts with local culture in comic format.

Comics, as a unique visual communication medium, use text and images in creative forms and have the power to convey information in a popular and easy-to-understand way (Putra & Milenia, 2021). Rosida & Hastuti 2020 in (Gunawan & Sujarwo, 2022) also stated that comics with serial image forms are unique in their own right as learning media by presenting events chronologically. Learning comic media can be interpreted as a unique visual communication media that uses text and images in creative forms to convey information in a popular and easy-to-understand way in the teaching and learning process.

According to Rahaju, a flat shape can be defined as a shape that has two dimensions, namely length and width, but does not have height or thickness (Unaenah et al., 2020). According to Hardiansyah in (Purnamasari, 2021), A flat shape is a flat shape that has two dimensions, namely length and width but does not have height and thickness. From the definitions above, it can be concluded that a flat shape is a flat plane that only has two dimensions, namely length and width, and does not have height or thickness.

Al-Akbar Mosque Surabaya is one of the largest mosques in Indonesia which has beautiful architecture and is rich in mathematical values. This mosque has many flat shapes, such as rectangles, squares, triangles, and circles. These flat shapes can be used to teach mathematical concepts to elementary school students.

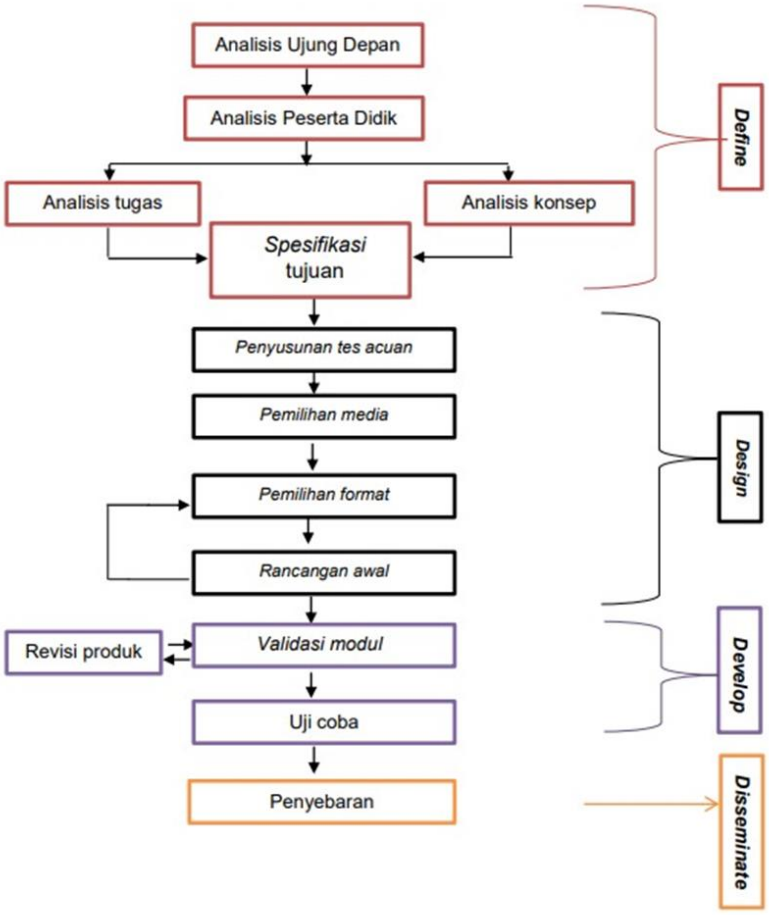
Comics are one of the interesting and easy-to-understand learning media for students. Comics can be used to convey information visually and interactively, so that students are more interested in learning, so a comic based on ethnomathematics of the Al-Akbar Mosque in Surabaya was created for elementary school flat geometry learning. This comic is expected to help students understand and learn the concept of flat geometry in a more interesting and contextual way. The uniqueness of the ethnomathematics-based comic that the researcher created includes, this comic uses the Al-Akbar Mosque in Surabaya as a learning object. That way, the mathematics material is linked to the culture and surrounding environment, making it more interesting and easy to understand; the comic theme uses learning activities at the Al-Akbar Mosque, which children will definitely like; the comic cover is attractive with a colorful and informative design; the comic provides complete information about various flat geometry, starting from the definition, characteristics, and examples; the comic illustrations are attractive and colorful, making the comic more lively and fun; the comic features characters that are familiar to children, such as teachers and students; the comic provides practice questions at the end to test the reader's understanding.

Facts discovered by *(Sianipar et al*., 2025) Based on observations made so far, the learning process carried out is still not optimal to improve student learning outcomes, because students wait more for explanations from the teacher, there is no reciprocal process between students and teachers. Then the researcher tried to examine what symptoms influenced the still low mathematics learning outcomes of students at SDN Ngagelrejo I/396 Surabaya, so that several symptoms were found: (1) Some students do not understand the material given by the teacher; (2) Most students still do not pay attention to the teacher explaining; (3) Some students consider mathematics as an abstract and difficult subject to understand; (4) Learning methods are less interesting. One of the factors that influences the improvement of student learning outcomes is an interesting learning method that encourages student activity in the learning process.

Based on the background that has been explained previously and at the same time narrowing the field of discussion so as not to widen, the researcher is interested in combining ethnomathematics with comic learning media in increasing the motivation and learning outcomes of students in studying flat shapes. So the researcher made a study entitled "**Ethnomathematics-Based Comics of the Al-Akbar Mosque, Surabaya for Elementary School Flat Shape Learning**".

Research Method

The research development model used refers to the 4D model. The 4D model uses 4 stages of development, namely Define, Design, Development, and Disseminate. However, it is limited to 3 stages of development, namely Define, Design, and Development without Disseminate. This is due to limited resources, be it time, funds, or manpower, the development of this comic focuses more on the process of producing a quality final product and the development of this comic is only for certain classes, namely class II of elementary school. 4D model design cycle:



Gambar 1 Modification of Development Stages (Prawito Galih, 2020)

In the define stage, researchers determine and explain the needs and collect information related to things that will be developed in the product to be created. In the define stage, there are 5 activities, namely (1) front-end analysis to determine the basic problems faced in learning, (2) student analysis to find out about student characteristics that are in accordance with the design of the learning device to be developed, (3) Task Analysis, namely by identifying various main skills needed in learning activities that will be developed in the learning device, (4) Concept Analysis, namely determining the material that researchers will use by selecting material that is in accordance with student needs, (5) Specific Objectives, namely formulating more specific task development objectives based on previous analysis. The design stage determines the design that will be applied in 3 stages. (1) Selection of media, (2) selection of format, (3) making an initial design. The Develop stage aims to produce a product. In this stage, the product that has been created must go through several stages of improvement from experts or validators and be tested on consumers as users. In this stage, there are 3 activities. (1) Expert Validation, assessment from experts according to their fields. (2) Revision stage to correct weaknesses found by

experts at the validation stage, (3) Product trial, an activity to test the initial product design on real subjects, then get responses or comments for product improvements.

Data collection techniques

The data collection method in this study used interviews, questionnaires (validation by material experts, media experts, language experts, and student questionnaires) and documentation.

Data analysis techniques

The types of data to be obtained in this development research are descriptive analysis and descriptive quantitative analysis. Descriptive analysis is obtained from the results of a review in the form of interviews with the homeroom teacher of class II SDN Ngagelrejo I/396 Surabaya, suggestions for validator improvements and student responses in filling out the questionnaire. The data is processed logically and meaningfully into systematic sentences, classification of an object, so that it becomes a general conclusion. Descriptive quantitative analysis is obtained from the validation expert team and wa regarding the assessment of the media created. Data obtained from the expert team and student questionnaires are in the form of analysis questionnaires and are processed descriptively into interval data using a Likert scale.

Tabel 1 Likert Scale

Answer Choices	Score
Strongly agree	4
Agree	3
Don't agree	2
Strongly Disagree	1

This technique is used to find out decision making in improving the product being developed. This calculation uses a Likert scale formula adapted from (Beno *et al*., 2022):

$$P = \frac{\sum x}{\sum xi} \text{ x } 100\%$$

Keteranga:

P = Persentase data angket yang dicari
$\sum x$ = Jumlah skor validator (nilai nyata)
$\sum xi$ = Jumlah skor maksimal dalam keseluruhan instrumen
100 = Bilangan konstan

The results of the calculations according to the formula are then matched with the product eligibility criteria which can be seen in the following table:

Tabel 2 Product Eligibility Criteria

Intervals	Criteria
<20%	Totally Not Worth It
21% - 40%	Don't agree
41% - 60%	Decent Enough
61% - 80%	Worthy
81%-100%	Very Worth It

Results and Discussion

The results of this study are in the form of ethnomathematics comic media products based on the Al-Akbar Mosque in Surabaya, flat shape material for grade II of elementary school. In order for students to remain interested and motivated in learning mathematics, this media product is used as reading material during the learning process. The stages of define, design and develop are the 3 steps used in this study.

Development Process

a. Analysis

1. Front end analysis

The activities carried out at this stage are conducting interviews with teachers to collect various information in the form of problems faced during the learning process in order to design an appropriate product so that these problems can be overcome. Based on the results of the interview, it was found that literacy in class 2C was good, but there were still some children who understood literacy but could not write well, they could start reading but it was difficult to apply it to writing. Meanwhile, numeracy in class 2C was good. But there were students who sometimes did not focus on numeracy so that sometimes they answered questions incorrectly.

The process of learning mathematics with an ethnomathematics approach in the classroom has been applied. Because teachers sometimes relate the material to the culture of the students they experience so that understanding the material becomes easier to understand. However, the use of ethnomathematics-based comics has never been applied, so according to the homeroom teacher 2C this media can attract students' attention in understanding the material.

2. Learner analysis

Classroom learning is accustomed to the lecture method where students only listen and understand what the teacher explains. Occasionally, teachers also show learning videos and powerpoints. However, this has not attracted the interest of some students in mathematics learning and there is no media that supports numeracy literacy such as ethnomathematics comics, especially in mathematics subjects. Therefore, there needs to be additional comic media using an ethnomathematics approach to make mathematics learning more interesting and contextual.

3. Task Analysis

The activities carried out in the task analysis are identifying and compiling the materials to be studied systematically. The material to be used in the ethnomathematics comic media is Flat Buildings for grade II elementary school students. There are 6 scenes in the comic, in addition at the end of the comic there are 3 practice questions that must be done by students to train students' understanding of the comic media.Analisis konsep

Concept analysis was conducted to examine Learning Outcomes (CP) and Learning Objective Flow (ATP) according to the independent curriculum listed in the Ministry of Education and Culture, namely:

Table 3 CP and ATP

CP (Learning Outcomes)	ATP (Learning Objective Flow)
At the end of phase A, students can recognize various plane shapes (triangles, quadrilaterals, polygons, circles). They can compose and decompose a plane shape (triangle, quadrilateral, and polygon).	Through comic-assisted learning based on ethnomathematics at the Al-Akbar Mosque in Surabaya, students can recognize flat shapes (triangles, quadrilaterals, polygons, and circles) correctly.

4. Goal specifications

The objective specification is carried out to design media in the form of ethnomathematics comics based on Learning Outcomes (CP) that have been determined in the concept analysis. The following is a table of learning objectives for learning media in the form of comics.:

Table 4 Learning objectives

No	Learning objectives
1.	Through PBL learning assisted by comics based on ethnomathematics at the Al-Akbar Mosque in Surabaya, students can recognize flat shapes (triangles, quadrilaterals, polygons, and circles) correctly (C1).
2.	Through the ethnomathematics-based comic media of the Al-Akbar Mosque in Surabaya, students are able to identify various types of flat shapes correctly (C4).
3.	Through the ethnomathematics-based comic media of Majid Al-Akbar Surabaya, students are able to draw flat shapes correctly (C3).

b. *Design*

1. Media Selection

In the process of selecting the media for the Ethnomathematics-Based Comics of the Al-Akbar Mosque in Surabaya on the material of flat shapes, it is based on the results of concept analysis, task analysis, and analysis of student characteristics. So that the use of ethnomathematics-based comics is more optimal. From the results of the analysis at the stage of defining the media selected in this study is the Ethnomathematics-Based Comics of the Al-Akbar Mosque in Surabaya for Elementary School Flat Shape Learning.

2. Format selection

In the process of selecting the format, the format used is based on the Ethnomathematics of the Al-Akbar Mosque in Surabaya. The comics created have an attractive design, so that the products used are in accordance with the character of grade II elementary school students. This study has a limitation on the discussion of flat shapes, namely only introducing flat shapes in the Al-Akbar Mosque building in Surabaya such as circles, squares, rectangles, polygons, and triangles.

3. Preliminary construction

The initial design in making Ethnomathematics-Based Comics is to make a front cover and create designs on each page using the Canva application. Ethnomathematics-Based Comics are made using A5 paper size, several types of fonts, animations, photos of parts of the Al-Akbar Mosque in Surabaya in the form of flat shapes. The finished comics are then converted into pdf and printed using A5 paper.

The initial draft of the Ethnomathematics-Based Comic that had been made was first consulted with the supervising lecturer so that comments and suggestions would be obtained for revision to produce the Ethnomathematics-Based Comic draft 1 which would be tested by expert validation.

c. *Develop* (Pengembangan)

1. Expert Validation

a) Presentation of descriptive quantitative data

Previously, it has produced Ethnomathematics-Based Comics on flat building material in the form of draft 1. Furthermore, draft 1 was submitted by the researcher to expert validators to carry out product validation tests. The indicators that will be assessed include the feasibility of the material, the feasibility of the media, and the feasibility of the language in the comic. The following are the results of the validation of the Ethnomathematics-Based Comic development product by several experts which can be seen in the table below:

Tabel 5 Validation Results of Validator Experts

No	Expert Validator	Total Score	Eligibility Kriteria
1.	Erlin Ladyawati, S.Pd., M.Pd	95%	Sangat Layak
2.	Dr. Arif Mahya Fanny, S.H., M.Pd	81,8%	Layak
3.	Pana Pramulia, S.Pd., M.Pd	91,6%	Sangat Layak

Based on the table above, the development of digital comic learning media based on ethnomathematics of the Al-Akbar Mosque, Surabaya, on the material of flat shapes can be stated as Very Suitable for use.

b) Descriptive flat presentation

The following are the results of the review in the form of suggestions for improvement from the validator to develop ethnomathematics-based comic learning media on flat geometry material to be even better.

Table 6 Validator improvement suggestions

Ahli Materi: **Erlin Ladyawati, S.Pd., M.Pd**
Ada sedikit revisi pada buku komik (lihat pada buku komik) segera diperbaiki dan setelahnya dapat digunakan sesuai kebutuhan.
Ahli Media: **Dr. Arif Mahya Fanny, S.H., M.Pd**
1. Kata petunjuk diperjelas 2. Gambar cari yang relevan
Ahli Bahasa: **Pana Pramulia, S.Pd., M.Pd**
-

2. Revision

After the product design has been validated by experts, the next step is to make improvements to the design that has been suggested. These design improvements were developed based on suggestions and input from several experts, including:

a. Material expert

Table 7 Revision Material Expert

Information	Before Revision	After Revision
Fixes to the circle image that need to be colored to make it clear.	 In the comic before it was fixed, there was no example of a complete circle.	 After being repaired, there is an example of a complete circle image in it.

b. Media expert

Tabel 8 Revision Media Expert

Information	Before Revision	After Revision
The spelling of "rules of use" has been corrected to "how to use".	 Before it was fixed, there was a text saying "Rules for using comics"	 After being corrected, the text "Rules" was changed to "How to use comics"
Corrected spelling of "Scan" to "scene"	 Before it was repaired, it said "Scan 1" incorrectly	 After being repaired, the text "Scan 1" was changed to "Scene 1"

c. Linguist

From the Language Expert, there are no revisions that need to be fixed in the comic product.

3. Product trial

The results of the development of the Ethnomathematics-Based Comic product at the Al-Akbar Mosque in Surabaya for Elementary School Flat Building Learning were tested in a limited trial by 6 respondents from grade II Elementary School students from SDN Ngagelrejo I/396 Surabaya. This limited trial was conducted on November 29, 2024.

The results of the limited trial calculation were 92.91% so that the Ethnomathematics-Based Comic product can be categorized as "Very Eligible" for use.

The Feasibility of Ethnomathematics Comic Products of Al-Akbar Mosque Surabaya for Mathematics Learning

The feasibility of this research product was assessed through a validation stage carried out by three expert validators. To determine its feasibility, an analysis was carried out on the validation results from material experts, language experts, and learning media experts. The final validation values were as follows: 95% from material experts, 81.8% from media experts, and 91.6% from language experts. These results indicate that the Al-Akbar Mosque Ethnomathematics Comic developed for learning to identify flat shapes in elementary schools is very feasible to use.

At the feedback and revision stage, two improvements were made based on suggestions from experts to improve product quality. The overall feasibility assessment results showed that the comic product was very valid, with an average value categorized as "very feasible" after revision. Thus, the comic product can be used effectively as a mathematics teaching material for 2nd grade elementary school students.

Student Responses to Ethnomathematics-Based Comic Products of Al-Akbar Mosque, Surabaya for Flat Building Learning

Students' responses to the use of the Ethnomathematics Comic of Al-Akbar Mosque Surabaya for learning flat shapes in elementary schools were evaluated through a small-scale trial stage. The trial involved six second-grade students of SDN Ngagelrejo I/396 Surabaya. The results showed an average percentage of 92.91% of students, this indicates that the Ethnomathematics Comic of Al-Akbar Mosque Surabaya is very effective for teaching flat shapes in second-grade mathematics. Based on these responses, the comic is categorized as very suitable for use and distribution as student reading material**.**

Gambar 2 With Class II Students of SDN Ngagelrejo I/396 Surabaya

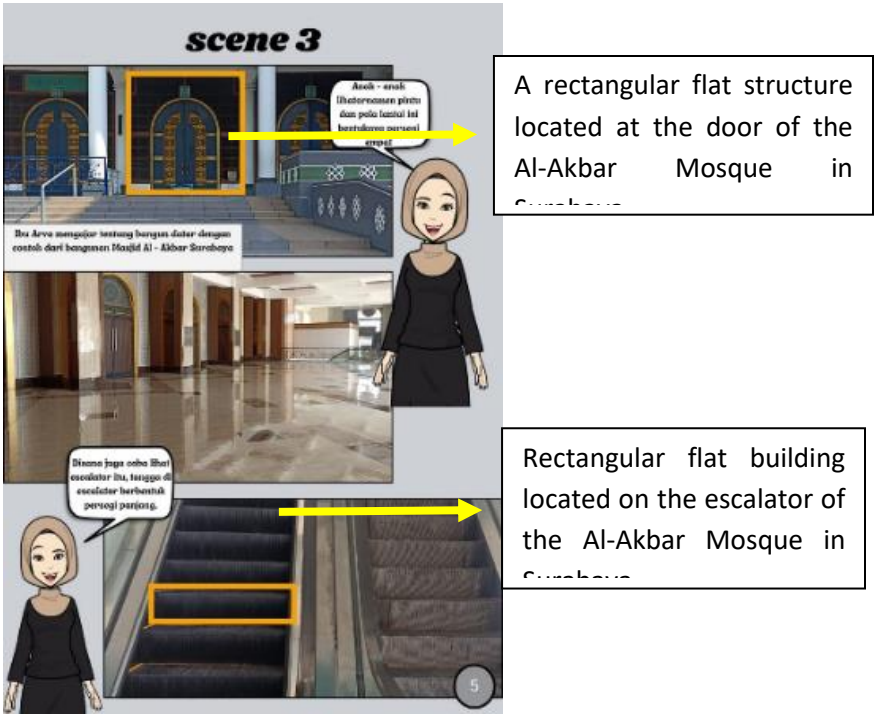
Discussion

Reading materials in the form of learning media Comics Based on Ethnomathematics on flat building material for grade II SD are made using the Canva application. The comic creation stage begins

with creating a design on each page using the Canva application, this application is fairly easy to use because there are many features that can be used.

Research and development (R&D) using the 4D model produced a product in the form of a Comic Media Based on Ethnomathematics of the Al-Akbar Mosque, Surabaya for Elementary School Flat Building Learning, but was limited to the Develop stage only.

Here is one of the pictures of the ethnomathematics comic section which contains flat shapes in the Al-Akbar Mosque:



Gambar 3 Ethnomathematics Comic Section

In the picture above, there is a mosque building like a door that is "square", and there is also an escalator inside the Al-Akbar Mosque in Surabaya which is rectangular.

The product of the development has gone through a validation process by Material Experts, Media Experts, and Language Experts. The Material Experts stated that the product of the development is valid for use with minor revisions. The researcher has revised the product of the development according to the suggestions of the Material Experts. Similar to the Material Experts, the Media Expert stated that the product of the development is valid for use with minor revisions. The researcher has revised the product of the development according to the suggestions of the Media Experts. Finally, the Language Expert stated that the product of the development is valid and can be used without revision.

From the validation results by the validators, the percentage of material expert lecturers reached 95% with the criteria of "Very Eligible", media experts reached 81.8% with the criteria of "Very Eligible", language experts reached 91.6% with the criteria of "Very Eligible", and from the results of the student response questionnaire on a small scale reached 92.91%. This is in line with research related to the use of comic learning media conducted by (Ni Made Santi Ayuni *et al*., 2023) entitled "Development of Digital Comic Media for Mathematics Based on Local Wisdom of Jejaitan Topic Identifying Angles for Grade IV Elementary School Students". In addition, it is also relevant to research conducted by (Azizah Shinta Dewi, 2023) entitled "Design of Comic Media Education for Flat Buildings for Grade 4 of Al Islam Plus Krian Elementary School" with validation results that this comic has received a good level

of feasibility and useful inputs on research until it becomes a final product. The trial conducted on 3 grade 4 elementary school students at Al Islam Plus Krian Elementary School also received positive responses. This study obtained satisfactory results, namely there was a difference in student learning outcomes after implementing digital comic media Mathematics based on local wisdom jejaitan, the percentage of media practicality was also very well qualified at 95.6%. It can be concluded that the Ethnomathematics-Based Comic Media of the Al-Akbar Mosque Surabaya for Elementary School Flat Building Learning is Very Feasible to be developed.

Conclusion

Based on the results of the research and development process and the validation test data for the media product "Ethnomathematics-Based Comics of the Al-Akbar Mosque, Surabaya for Elementary School Flat Building Learning", it can be concluded that:

1. The development of Ethnomathematics-Based Comics on this flat building material uses a 4D development model consisting of 4 stages, namely Define, Design, Development and Disseminate. However, in making this Ethnomathematics-Based Comic, it was only carried out up to the Development stage, because if it was continued to the Disseminate stage, it would take a long time and more money.
2. The feasibility of the Ethnomathematics-Based Comic Product of the Al-Akbar Mosque in Surabaya for Elementary School Bnagun Datar Learning from the validation results of several experts, including validation by material experts obtained an average value of 95% with the criteria of "Very Feasible", validation by media experts obtained an average value of 81.8% with the criteria of "Very Feasible", and validation by language experts obtained an average value of 91.6% with the criteria of "Very Feasible".
3. The response of students at SDN Ngagelrejo I/396 Surabaya in a limited trial conducted on 6 grade II students obtained an average score of 92.91% with the category of "Very Eligible". With the score and percentage obtained, the Ethnomathematics-Based Comic of Al-Akbar Mosque Surabaya for Elementary School Flat Building Learning is very feasible to use.

References

Ana, M. K. S., & Mariana, N. (2022). Eksplorasi Etnomatematika Bentuk Bangunan Masjid Al-Akbar Surabaya Pada Materi Geometri Di Sekolah Dasar. *Jpgsd*, *10*(4), 902–913.

Andriono, R. (2021). Analisis Peran Etnomatematika dalam Pembelajaran Matematika. *ANARGYA: Jurnal Ilmiah Pendidikan Matematika*, *4*(2). https://doi.org/10.24176/anargya.v4i2.6370

Azizah Shinta Dewi, N. (2023). Bangun datar merupakan suatu bidang datar yang dibatasi oleh garis lurus ataupun garis lengkung. Lebih tepatnya suatu bangun yang memiliki bidang rata serta mempunyai dua dimensi yakni panjang dan lebar namun tidak mempunyai tinggi atau ketebalan. *Jurnal Barik*, *5*(1), 15–26. https://ejournal.unesa.ac.id/index.php/JDKV/

Beno, J., Silen, A. ., & Yanti, M. (2022). Pengembangan Media Pembelajaran Digital Berbasis Aplikasi Padlet Pada Materi Bangun Segi Banyak. *Braz Dent J.*, *33*(1), 1–12.

Gunawan, P., & Sujarwo. (2022). Pemanfaatan Komik Sebagai Media Pembelajaran Sejarah dalam Meningkatkan Motivasi dan Hasil Belajar Siswa. *Journal of History Education and Historiography*, *6*(1), 2022.

HARYANI, H. (2021). Penerapan E-Learning Sebagai Media Pembelajaran Jarak Jauh Untuk Meningkatkan Hasil Belajar Mata Pelajaran Fiqih Di Mts Negeri 5 Klaten. *Teaching : Jurnal Inovasi Keguruan Dan Ilmu Pendidikan*, *1*(2), 60–68. https://doi.org/10.51878/teaching.v1i2.256

Indonesia, E. U., & Depan, D. I. M. (2023). *Berkelanjutan : Tantangan Dan Peluang Di Masa Depan*. Fakultas keguruan dan ilmu pendidikan Universitas Mercu Buana Yogyakarta.

Ni Made Santi Ayuni, I Made Suarjana, & Gusti Ayu Putu Sukma Trisna. (2023). Pengembangan Media Komik Digital Matematika Berbasis Kearifan Lokal Jejaitan Topik Mengidentifikasi Sudut untuk Siswa Kelas IV SD. *Jurnal Media Dan Teknologi Pendidikan*, *3*(2), 119–128. https://doi.org/10.23887/jmt.v3i2.60821

Nova, I. S., & Putra, A. (2022). Eksplorasi Etnomatematika pada Cerita Rakyat. *Plusminus: Jurnal Pendidikan Matematika*, *2*(1), 67–76. https://doi.org/10.31980/plusminus.v2i1.1497

Pramulia, P. (2025). *Ethnomathematics of Al Akbar Mosque Surabaya : Augmented reality comics to improve elementary school students ' literacy and numeracy*.

Prawito Galih, M. (2020). *Dissminate*.

Purnamasari, S. (2021). Analisis Penggunaan Media Lagu Untuk Meningkatkan Kemampuan Representasi Matematis Siswa Materi Bangun Datar Kelas IV Sd. *Doctoral Dissertation, STKIP PGRI PACITAN*, 12–42.

Putra, A., & Milenia, I. F. (2021). Systematic Literature Review: Media Komik dalam Pembelajaran Matematika. *Mathema: Jurnal Pendidikan Matematika*, *3*(1), 30. https://doi.org/10.33365/jm.v3i1.951

Riani Johan, J., Iriani, T., & Maulana, A. (2023). Penerapan Model Four-D dalam Pengembangan Media Video Keterampilan Mengajar Kelompok Kecil dan Perorangan. *Jurnal Pendidikan West Science*, *01*(06), 372–378.

Safika Nurazlaila, S. (2023). *Media Komik Berbasis Etnomatematika.pdf*.

Setiawan, B., Pramulia, P., Kusmaharti, D., Juniarso, T., & Wardani, S. (2021). Peningkatan Kompetensi Guru Sekolah Dasar Dalam Pengembangan Media Pembelajaran Daring di SDN Margorejo I Kota Surabaya Provinsi Jawa Timur. *Manggali*, *1*(1), 46. https://doi.org/10.31331/manggali.v1i1.1547

Shidqi, M. A. K., & Yustitia, V. (2024). Ethnomathematical exploration of the Al-Akbar National Mosque Surabaya in picture pattern material for fourth grade elementary mathematics. *Union: Jurnal Ilmiah Pendidikan Matematika*, *12*(2), 298–310. https://doi.org/10.30738/union.v12i2.17307

Sianipar, S. L., Tj, H. W., & Andriono, T. (2025). *Prosedur Polya dalam Pembelajaran Kooperatif TGT untuk Meningkatkan Motivasi dan Hasil Belajar Matematika Siswa Kelas 2 SD*. *10*(1), 366–372.

Studi, P., Matematika, T., Tarbiyah, F., & Ilmu, D. (2023). *Skripsi pengembangan majalah elektronik matematika berbasis etnomatematika pada materi bangun ruang sisi datar*.

Unaenah, E., Hidyah, A., Aditya, A. M., Nur, N., Maghfiroh, N., Dewanti, R. R., Safitri, T., & Tangerang, U. M. (2020). *Bangun Datar Sekolah Dasar*. *2*, 327–349.

Copyrights