

Ethnomathematics-Based Mathematics Learning Activities in Labuhan Batu Pesisir Beach Malay Communities

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Abstract

The purpose of this research is for the public to have awareness that this profession from Malay custom is particularly related to a mathematics learning, with the hope that it can improve the results of learning and the abilities of its students. This study uses a qualitative research method using a descriptive approach that uses collection tools with documentation, interviews and in data processing using literature analysis and then a data result can be obtained which has found a connection from the concept of learning mathematics using function material, sets, as well as geometry. Ethnomatematics is also mathematics in which there are elements of culture, what is meant by this culture is a habit of human behavior that exists in its environment. In an Ethnomatematics study, a material about "Face-to-Face Rice" and "Songket Cloth" at Malay traditional weddings in the Labuhan Batu Pesisir Beach area has been raised. The tradition of this event has been carried out from generation to generation and this is also one of the main events in the Malay community of Labuhan Batu Pesisir Beach.

Keywords: Method, Ethnomatematics, Face to Face Rice, Songket Cloth, Learning Mathematics

Abstrak

Tujuan dari penelitian ini adalah agar masyarakat memiliki kesadaran bahwa profesi dari adat Melayu ini khususnya terkait dengan pembelajaran matematika, dengan harapan dapat meningkatkan hasil belajar dan kemampuan siswanya. Penelitian ini menggunakan metode penelitian kualitatif dengan menggunakan pendekatan deskriptif yang menggunakan alat pengumpulan dengan dokumentasi, wawancara dan dalam pengolahan data menggunakan analisis kepustakaan dan kemudian dapat diperoleh hasil data yang telah menemukan keterkaitan dari konsep pembelajaran matematika menggunakan materi fungsi, himpunan, serta geometri. Etnomatematika juga matematika yang di dalamnya terdapat unsur-unsur budaya, yang dimaksud dengan budaya ini adalah kebiasaan perilaku manusia yang ada di lingkungannya. Dalam kajian Etnomatematika, telah diangkat materi tentang "Beras Tatap Muka" dan "Kain Songket" pada acara pernikahan adat Melayu di kawasan Pantai Labuhan Batu Pesisir. Tradisi acara ini telah dilakukan secara turun temurun dan ini juga menjadi salah satu acara utama dalam masyarakat Melayu Pantai Labuhan Batu Pesisir.

Kata Kunci: Metode, Etnomatematika, Beras Tatap Muka, Kain Songket, Belajar Matematika

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INTRODUCTION

A tradition is an idea that has come from ancient times or a form of habit that has been done many times in the same way. In this custom it is also common to do it many times because it has been considered very beneficial for the community and can be preserved. While the Malay tradition is a habit that has been carried out from the past in the Malay area and is usually used as part of life or groups in Malay society, and of course this custom also includes cultural values, laws, norms, and rules that apply. already has a connection to the habits that have been done.

This tradition also has a purpose or function in order to help provide a place for complaints, disappointments, and dissatisfaction in future or modern life. Mathematics is also a science that has a

conceptual object and prioritizes a process of reasoning that has universal characteristics and always has symbols, calculations, symbols and concepts (Setiawan & Sulistiani, 2019). So besides that, mathematics is a branch of science that has various roles in its activities in everyday life.

Mathematics is one of the subjects that students have studied from elementary to high school and even to college. Which has proven that mathematics is one of the lessons that already has an important part in everyday life. Mathematics skills in schools are not only logically constructed and based on abstract cognitive structures as a combination of knowledge and skills previously possessed.

Labuhan Batu Regency is geographically located on the coast of Sumatra, Labuhan Batu Regency, whose capital is Rantauprapat, is one of the regencies in the area and region of the east coast of North Sumatra province which is located at coordinates 1 North Latitude and $26^{\circ} - 2^{\circ} 11' 9'' 01' - 95^{\circ} 53'$ East longitude, which in ancient times in this existence had a very important role in the arena of trade relations both locally and internationally. Which is inseparable from the Malacca Strait as the most important route of passage as a form of interest which has become a complex area for inter-foreign and local authorities.

Ethnomathematics is one of the mathematics-based learning systems that is usually associated with strategies from its culture (Putra et al., 2020). Ethnomathematics is also a part of the mathematics of culture, and this culture is also a habit or behavior that exists in the environment. Culture is a form of action that is usually done by someone and can be found from the area (Aziz & Suryadi, 2017). Ethnomathematics can also change the existence of mathematical relations that are recognized as orderly and rigid in the reality of society. By applying this Ethnomathematics, it can be expected to increase the abilities of students in learning mathematics to the fullest.

Previous research on Ethnomathematics has been carried out quite a lot, which includes research (Sarwoedi et al., 2018) which states that learning mathematics from Ethnomathematics-based mathematics has been effective in being able to increase the ability of students' understanding. Hayuhantika & Rahayu, (2019) in their research stated that Ethnomathematics is a bridge between mathematics and its culture which provides a meaningful learning experience. In addition, Febriyanti et al., (2018) have conducted a study from Ethnomathematics on the traditional hopscotch and top games from Sundanese culture. And there are also results from Maryati & Prahmana, (2018) who has researched the Exploration of mathematical activity in the design activities of the kebaya kartini. From this discussion the author will also make ideas from mathematics from Malay culture in Labuhan Batu Pesisir Beach. Which is expected to be able to increase motivation in learning mathematics.

The Malay tribe is an ethnic group that usually inhabits North Sumatra which already has a variety of traditional processions (Akbar, 2021), and Malay culture in general also includes various arts, namely reciprocal rhymes, Malay music, Malay poetry, Malay dances, traditional symbols, Malay relations, customary law, Malay relations associated with Islam and Malay traditional wedding processions. Which has also been associated with evidence of his legacy and has also been preserved

to the present.

The nasi tanding tradition is the ceremony of eating rice facing front which has meaning as one of the events in the marriage of the LabuhanBatu Pesisir Coastal Malay tribe and this can also have similarities with Malay tribes in other regions.

Apart from the rice, it turns out that Songket cloth is also an important object in the Malay Coastal Labuanbatu area, especially for Malays. songket cloth is a work of traditional woven crafts which has been included as a very important form of discovery from Malay culture and this also functions as part of the identity of the Malay tribe (Wati, 2021).

In this study, it will also provide an explanation as to the relationship between concepts from mathematics which has also been carried out with the aim of being able to find ethnomathematics in the object of research, which can also be used as material for learning objects of mathematics and can also get to know various kinds of culture. that has been applied in learning mathematics.

METHOD

In this study using qualitative research with descriptive methods which have a goal to be able to describe or analyze a study. The descriptive method is a method that can be used to gather information relating to the existence of an object event from research on Ethnomathematics "Face-to-face Rice" (Sugiyono, 2013). This qualitative descriptive research also has a goal in order to be able to explain in more detail the existence of a problem and an event (Moleong, 1999). Instruments in data collection using interviews. This research was also conducted in the author's residential area where he interviewed people who had experience in making traditional Malay weddings "Nasi Face-front". The technique in collecting data that has been carried out is interviewing via a cell phone in order to be able to get information, the information data needed is in the form of telephone interview observations in which the interview provides general questions conducted with a Mrs. Hj. Roswani who has experience in participating in the event.

RESULT AND DISCUSSION



Figure 1. Malay Traditional Weddings in Labuhan Batu Pesisir

Before starting the event, the bride and groom are usually asked to sit face to face in a rectangular shape or also sit in a square shape according to the size or area of the place to allow the event to begin.

Clothing in Malay Culture

Basically, old Malays already have descriptions of traditional clothing. That from the first time the Malay Sultanate of Malacca and other Malay Sultanates could feel incomplete for someone who was wearing national clothes and did not cover his head so he could attend official events (Fang, 2011). The shape on the head generally does not have to be determined, but is usually tied to the type of covering made of cloth which is the basic material for use.

Songket as a wedding dress



Figure 2. Songket used Traditional Weddings in Labuhan Batu Pesisir.

The wedding dress is a fairly important matter at the wedding ceremony. In the Labuhanbatu Coastal Coastal Malay traditional wedding dress, it is generally the same as Malay clothing from various regions. For the bride, the clothes used are bajurung brackets or baju kebaya and its cloth, songket, bun, and jewelery such as bracelets, belts, collars and chains. Meanwhile, the clothes for the groom usually consist of a Chinese scissors shirt with loose pants and a headband, which is a cloth that has been covered with hard cloth and also decorated with beaded decorations, with various shapes tied on the head (Takari et al., 2012).

The following are some explanations regarding the relationship between the concept and the set material for the Malay songket motif in Labuhanbatu Pesisir Beach:

- a. Common motifs in songket, woven motifs that are usually used in Malay songket cloth in Labuhanbatu can be connected to the concept of a set. Which of these subsets is the type of set that can be defined on this concept.

A (common songket motif) = {Tepak betel, Sultan's crown, sailing canoe, sunflower, lotus flower, jasmine, rose, begantung, duck (duck)} then $A(n) = 8$

- b. The motifs in the form of heirlooms are those used in the concept of sets which are part of the types of sets that can be defined in this concept.

B (songket motif on heirlooms) = {Tepak betel, sultan's crown, sailing canoe} then $B(n) = 3$

- c. The motif in the form of a flower is also used in the Malay songket Labuhanbatu which has a connection in the material of the set, this set is a type of subset that can be defined in this concept.

$C(\text{songket motif in flower shape}) = \{\text{Sunflowers, lotus flowers, roses, jasmine}\}$ then $C(n) = 4$

- d. The motifs in the form of animals are those that are usually also used in songket harbor stone which have a connection in the material of the set, this set is included in the subsets that can be defined in this concept. $D(\text{songket motif in animal form}) = \{\text{hanging bees, ducks (duck)}\}$ then $D(n) = 2$

The Procedure for Carrying Out the Tradition of "Face-to-front Rice"



Figure 3. Tradition of "Face-to-Front Rice in the Labuhan Batu Pesisir Malay Tradition"

Removing Flowers

At eating Nasi Face-facing, the program begins with a nanny or with rhymes. Where the game in removing this flower is pulling out the flower that has been placed above which is already filled with oil rice which is a main dish. This front-facing rice is where the bride and groom have to scramble to be able to get it under supervision. And if the man who was the first to succeed in pulling out the flowers maja he is said to be a husband who is always smart to be able to earn a living and will be able to make his family name proud later, and if on the other hand it is the woman who can remove the flowers first then she is a smart wife to be able to manage their finances. After carrying out the ceremony of removing the bride's flowers, they are usually given a round container filled with rice that already has a ring in it, then the bride and groom are required to compete to find the ring in a container containing rice. In the past, it was common for Malay people to fill rice with cooked rice, because times are getting more modern and if the rice used will become redundant and can't be eaten anymore, but if rice can still be used.

Plucking the Chicken

Which is the activity of fighting over this chicken that has been hidden in a bowl of oil rice that has been prepared by the two brides, and the two brides will start to look for the chicken pieces which are the part of the chicken that has been cooked. Which is in accordance with the instructions if the wife gets the chicken legs or from the wings then the husband will believe that he will always mess up if what he gets is a chicken which means a symbol of fertility.

Bribes

In this event, the bribes are according to one of the customs which is from a series of rice handlers that are held and can be placed in a place and then the chicken is also placed on top, then these bribes are in order to build intimacy and intimacy. from husband and wife, because in general Malay people have married their children through an arranged marriage where later the married couples do not know each other and then the bride feeds the husband which is a symbol of a wife's devotion. After eating, the bride and groom are ordered to take fruit and cake, which is intended so that the intention of doing this is to be able to determine the fate or fortune of the spouse's household which will come in the future.

Drink with Crossed Arms

Which drink with crossed hands is a form of part of the tradition of eating rice face to face which is done after finishing eating and feeding each other. And from this condition the hands that have been crossed from the bride and groom must be able to drink what is in this glass then when it is difficult but they must be able to replace each other so they can drink this drinking water. Which this tradition has tried is that in carrying out a marriage there will be ease and difficulty in both good and bad things, but you must still be smart in being grateful for it.

Eating together

This joint meal is also part of a series of events in a tradition of facing forward rice. And from this event also all of the two family members who have participated in the event will also carry out the activities of eating together so that the aim is to strengthen the ties of friendship between the two members of the bride and groom.

Food Distribution

After finishing the joint meal, the next event is the fence which is filled with various kinds of sweets and halua and candy which will be distributed by all family members who have participated in the procession of this event. In distributing food to all family members there should not be any left over, and all types of food that have been served must be distributed to everyone who has attended and can join the meal together which means that it can bring sustenance and can be sought and enjoyed together also. So don't like wasting food because food is also a form of sustenance and must be shared with those in need.

The Concept of Unity in the Procession of "Face-to-Fron Rice"

A set is a member that can usually be expressed in the form of a collection of objects (Safitri, 2022).

A collection of food offerings "Face-to-front Rice"

1. Assorted set of sweets

$A = \{\text{candied halua nutmeg, candied halua nutmeg}\}$ in this set belongs to the type of subset

2. Diverse set

$B = \{\text{candy in the shape of various birds, candy in the shape of various flowers, candy in the}$

shape of various dolls} this set is a subset

3. Set of types of food from jelly

$C = \{\text{flower jelly, star jelly, rectangle jelly, pineapple jelly, heart jelly, goldfish jelly}\}$ this set includes the type set of subsets

4. The set of food that is in the procession

$D = \{\text{various traditional cakes, various jelly, various fruit offerings, various sweets, various traditional snacks}\}$ this set is included in the universal set

5. Collection of traditional cakes

$E = \{\text{pandan cake, sukade cake, chocolate cake}\}$ this set is included in the subset type set

6. Collection of fruit offerings

$F = \{\text{flower-shaped fruit, duck-shaped fruit}\}$ this set is one of the subset types

7. A collection of various types of traditional snacks

$G = \{\text{various duck-shaped snacks, various flower-shaped snacks, various swan-shaped snacks}\}$

8. Food equipment set

$H = \{\text{a set of ceramic bowls, a set of dishes, spoons, knives, glasses, basins}\}$ this set is one of the subset types

The Concept of Functions in the Profession from "Face-to-Face Rice"

Function is a form of relationship that usually juxtaposes all members of the set from the region of origin to the opponent's region, one by one (Amir & Sartika, 2017). In a traditional procession of "Face-to-Face Rice", we can find that this procession has something to do with its functions, including:

- a. The data that has been obtained from two sets that can be obtained in the procession of "Face-to-front Rice" are (a type of jelly or jelly and has a category of the shape of the jelly) which can be stated as $A = \{\text{chicken, goose, duck, goldfish, pineapple, roses}\}$ and $B = \{\text{types of poultry, types of fish, types of fruits, types of flowers}\}$. So from the arrow diagram picture of its relational function what can be described is:

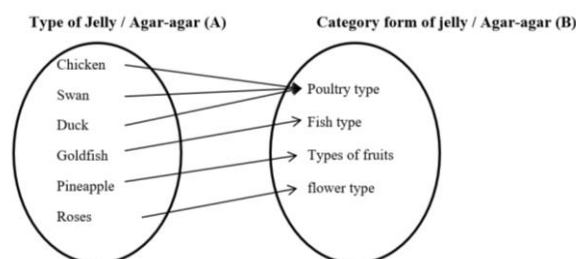


Figure 4. a type of jelly or jelly and has a category of the shape of the jelly.

- b. The data that has been obtained from the two series structures in the procession of "Face-to-front Rice" are (a type of traditional cake in the form of a traditional sponge cake) which can be expressed as $C = \{\text{sukade cake, pandan cake, chocolate cake}\}$ and $D = \{\text{cake pan from blocks, baking sheets from tubes}\}$ then it can be described as an arrow diagram whose relational functions that can be formed are:

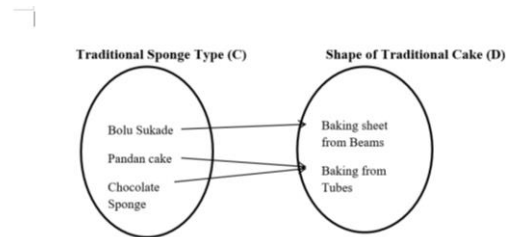


Figure 5. a type of traditional cake in the form of a traditional sponge cake.

- c. It can be found from the two tools in the traditional procession of "Nasi front-to-front" namely (type of basic food ingredients) which can be expressed as $E = \{\text{Traditional cake, jelly/jelly, sweets}\}$ and $F = \{\text{Bread flour, powder of jelly/gelatin, fruits}\}$.

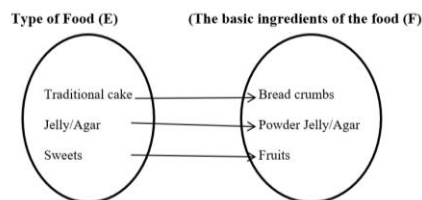


Figure 6. type of basic food ingredients) which can be expressed in Malay Tradition.

CONCLUSSION

At a wedding, this is something that is usually very important for a couple who wants to have a wedding. Indonesia is also a country that has a lot of ethnic diversity and customs in their respective regions. In every tradition, it is always included in the wedding reception, one of which is Malay custom. The tradition of Nasi-front and also the woven clothes "Songket" is a form of a part of culture in Malay society that has existed from generation to generation, besides that this rice-front-face has a meaning and function that is quite broad and inseparable. from wedding customs in the Malay area in Labuhan Batu Pesisir Coastal District. This event also has stages starting from preparing materials and having people involved in the event, and this tradition is also a form of belief or a form of entertainment and can give millions of messages and forms of ancestral heritage from their ancestors. . In the tradition of the face-to-face rice and songket clothes, it can also unite the friendship ties that can tie new relationships together. This tradition is also rarely carried out due to the times and the influx of foreign cultures. In the tradition of the face-to-face rice and songket clothes, it can also unite the friendship ties that can tie new relationships together. This tradition is also rarely carried out due to the times and the influx of foreign cultures. In the tradition of the face-to-face rice and songket

clothes, it can also unite the friendship ties that can tie new relationships together. This tradition is also rarely carried out due to the times and the influx of foreign cultures.

Based on the results and research, we can conclude that with the traditional procession of Nasi Front and the motifs of the Songket cloth, results can be obtained from the mathematical element which is a concept of flat shapes, functions, sets, and spatial shapes, in ethnomathematics in society. regarding the existence of a mathematical concept, it can be introduced to its traditional culture and can add insight into mathematics that is already connected in Malay culture. And we can also hope that this research can make the concept of culture with methods from learning mathematics applicable to schools, to be able to create learning that is relevant, interesting, and understandable to all these students.

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