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Ethnomathematical Exploration on Traditional Game *Bahasinan* in Gunung Makmur Village the Regency of Tanah Laut

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Abstract: Bahasinan is a traditional game, a maritime cultural heritage, which still exists today in the area of South Kalimantan, Indonesia, precisely in the village of Gunung Makmur. Bahasinan itself is a traditional game that should be played in groups. In Bahasinan, people can find many aspects that have strong correlation with the learning of mathematics. For example, in Bahasinan children should make up their arena by drawing six rectangles that should be combined with one another. This drawing of rectangles alone has contained mathematical concepts. Thus, the object of the recent study is to identify which part of the traditional game Bahasinan that contain mathematical concepts and to identify what mathematical concepts that have been contained in the traditional game. In conducting the study, the method that has been selected is qualitative study using ethnography. The data are gathered from observation, interview, and documentation with the local public figures and two children as the subject for the study. After the data have been collected, the data are analyzed by using data reduction, data presentation, and conclusion drawing or verification. In order to assure the data validity, triangulation method has been implemented so that the data that will be resulted are consistent. The results of the study show that the parts of the traditional game Bahasinan that contains mathematical concepts are game arena, game procedures, player position and player gesture whereas the mathematical concepts that can be found in the traditional game Bahasinan consist of two-dimensional figure, translation, reflection, inter-line connection, congruency, and mathematical activities.

INTRODUCTION

Indonesia is a country with abundant cultures embedding mathematical ideas, ways, and techniques using mathematical modeling. This creates opportunities in mathematics education to use local contexts and to boost students' critical reasoning and interest by reinventing mathematics rooted in students' culture existing in their surroundings to get the benefit from it (Prahmana, Rosa, & Orey, 2021). Comprising of thousand islands has become one of the factors that lead to the increasingly different cultures throughout the country. It is this cultural diversity that has shaped the pluralistic society, meaning that Indonesian people have different behaviors, customs, histories, and religions. Since culture refers to the general or universal phenomenon, this term can serve to accommodate the universal elements that can be found in every corner of the global society. Despite being general and universal, cultures have different shapes and forms. It is these different shapes and forms that make each culture unique (Maran, 2019).

Mathematics is one of the subjects that have been studied from elementary school until university for a long time and has been regarded as a fundamental subject (Charles et.al., 2019). Mathematics holds an important role in the daily life. For example, our activities such as waking up and going to bed cannot be set apart from concepts in mathematics. Unfortunately, sometimes Mathematics becomes a peculiar difficulty for some students and one of the reasons for this difficulty is that it is difficult for the students to comprehend the abstract concept within mathematics. Therefore, during the learning process in the classroom, the teachers should strive to make mathematics more interesting for the students. In addition, the students should be able to trigger the learning interest of the students especially the ones with less proficiency on certain materials. The teachers should be able to use the appropriate method within the learning process. Then, one of the ways to motivate the students to learn mathematics is encouraging the students to use the knowledge that they have and provide an opportunity for the students to reinvent and rebuild the mathematical concepts on their own. This end can be achieved by benefitting games. In fact, many researchers have opinion that to develop educational games for learning mathematics have shown that their games could facilitate mathematics performance, enjoyment, and growth self-efficacy (Ku et.al., 2014; MacLaren et al., 2017). Through this initiative, the students can both play and learn.

Mathematics that has association with culture is known as Ethnomathematics. Even many activities are identified as ethnomathematics, not all of them can be a good context in learning mathematics (Syahidah et.al., 2021). Ethnomathematics can be defined as part of mathematics that has been practiced by certain cultural groups such as urban people and rural people / villagers, children from certain age groups, customary communities, and alike (Rachmawati, 2012). An Ethnomathematics review contains several characteristics of mathematical activities in which there is a process of abstracting concrete experience into mathematics and vice versa and consists of grouping, calculating, measuring, devising tools or constructing buildings, making patterns, counting, finding location, playing and explaining.

The product of Ethnomathematics are the results of mathematical activities that have been

possessed or developed in the middle of Indonesian society by inserting the mathematical concept into the cultural heritage such as temples and inscriptions, potteries and traditional tools, and also batik and embroidery patterns. The traditional games alone have been in existence throughout Indonesia since the ancient time. Almost all regions in Indonesia have peculiar traditional games respectively. Traditional games thus can be considered as an activity that develops out of the habits from certain society (Apriyono & Kholil, 2018).

Traditional games are very interesting to play because these games do not only contain fun but also cultural values and mathematical concepts. The reason is because traditional games, not only include physical skills, but also brain and strategy designing skills (Vardani & Astutik, 2020). Mathematical concepts as abstract ideas for children can help them in grouping or identifying objects as the learning examples. One of the traditional games that have been often played by the children in Gunung Makmur Village, South Borneo, is *Bahasinan*. The word *Bahasinan* comes from the terms *baha* and *masinan*. The word baha, which is then written as *baha* means to play freely, while *masin* means spear, as a result *Bahasinan* means to play freely to avoid spears or middle players called *hasin*. *Bahasinan* itself is a traditional game that should be played in groups. The area of the game is rectangular and with lines as the border. In order to play this traditional game, there should be two teams. One team serves as the defensive one and the other serves as the offensive one. Unfortunately, with the rapid development of technology, the traditional games such as *Bahasinan* have been rarely played since the children prefer the modern games such as video game, PlayStation, and online games more than the traditional ones. Modern games can result in numerous negative impacts for both health and psychology of the children. In addition, modern games can also cause addiction, resulting in significant loss of time. Those situations are different from the ones that can be found among the children who play the traditional games. Usually, playing the traditional games will leave unforgettable impression among the children. In addition, the existence of traditional games really helps children to grow a good social spirit towards others and the surrounding environment (Kurniawan, 2018).

Several previous research results say that a number of traditional games in Indonesia have a contribution as a starting point in learning mathematics. The results of Fadila's research (2021), said that in the *Lompat Tali* game there are mathematical concepts that are usually learned at the elementary school level. Starting from counting natural numbers, measuring lengths, measuring distances, forming angles and lines. Another study, from Kuswidi et.al (2021), said that traditional *Layangan* games has many mathematical concepts, including the concepts of line, angle, circumference, area, and congruence.

Traditional games such as *Bahasinan* have been gradually eroded by the turn of the century; therefore, the traditional games should be developed and preserved so that these games can deliver multiple benefits for the children. One of these benefits, especially by playing *Bahasinan*, is that the children can learn about two-dimensional figure. In order to play *Bahasinan*, the children should make six rectangles next to each other. This activity holds the mathematical concept that the children should master so that they can draw the six rectangles with the same shape and proportion. This activity alone has shown the strong correlation between *Bahasinan*

and mathematics. If people explore more, there will be more associations that can be found. Departing from these associations, the researchers are encouraged to study and explore the parts of *Bahasinan* that contains mathematical concepts and the mathematical concepts that can be found in *Bahasinan*. So, very interesting to explore many concepts mathematics in *Bahasinan*, because there has been no previous research that examines *Bahasinan*.

METHOD AND DESIGN

The method used in this research is an ethnographic method, which is a method that describes the culture of a community (Spradley & McCurdy, 1989). Ethnography was chosen as the method in this study because it is linier with the aims of Ethnomathematics which study ideas, methods, and techniques in a particular culture from the original view of members of that culture (Prahmana, Rosa, & Orey, 2021).

The subjects for the study are two school-age children (6 – 12 years old) and one local figure namely the expert of *Bahasinan* traditional game. The study has taken place in the District of Takisung, the Regency of Tanah Laut, the Province of South Borneo. The data for the study are gathered through observation, interview, and documentation. The observation is used in order to have direct view on the phenomenon under the study by directly visiting the location without getting involved into the activity. In this study, what will be observed is the *Bahasinan* game arena, how to play it, the position of the players when playing the game, and the player's hand movements when playing. The observation instrument used is an observation sheet which contains indicators related to the *Bahasinan* game such as the *Bahasinan* playing arena, how to play the *Bahasinan*, the player's position when playing, and also the player's hand movements while playing.

Then, the interview technique that has been implemented in the study is the unstructured interview. In this occasion, the researcher has interviewed the local figure and the two school-age children in order to gather the necessary data. The interview instrument used was an interview guide sheet which contained indicators related to the *Bahasinan* game such as the *Bahasinan* playing arena, how to play the *Bahasinan*, the position of the players while playing, presented in Table 1.

Aspects (indicators) interviewed about the *Bahasinan* game	Interview Questions
Area to Play *Bahasinan*	. "What is the shape of the traditional *Bahasinan* playing arena?" . "Is there an official measure that has been set?"
How to Play *Bahasinan*	. "How is the procedure for the *Bahasinan* game?" . "Is there a specific officially defined way of playing?"
Player Position When Playing *Bahasinan*	. "What is the position of the players when playing the *Bahasinan* game?" . "Is there a special position when playing that has been set?"
Hand movements when players play *Bahasinan*	. "How are the players' movements when playing the *Bahasinan* game?" . "Are there any preset moves during play?"

Table 1: List of Questions

Last but not the least, documentation is also implemented in the study in order to gather the supporting data. Documentation related to the shape of the game arena, how to play and the position of the players when playing the game and hand movements when playing the game is discussed, of course, in-depth documents are needed to reveal it by collecting data. Documents in the form of photos are very important because from here the researchers relate the traditional *Bahasinan* games which will be analyzed for the concepts and mathematical elements contained in them.

After the data have been gathered, the data are analyzed by using qualitative data analysis by using three stages namely data reduction, data presentation, and conclusion-drawing or verification. A qualitative study is said to be scientific if there are levels of data trustworthiness. Consequently, the researchers use the data validity technique in order to take responsibility over the study. Furthermore, in order to test the data validity, the researcher has implemented the method triangulation. Sugiyono (2017) states that method triangulation refers to the data testing and comparison from the both the data source and the data observation. Method triangulation can elicit the data so that the data can be held trustworthy and the method triangulation is conducted by checking the data that have been retrieved from the study through several sources and observations. The data sources in the study consist of participatory observation, in-depth interview, and documentation.

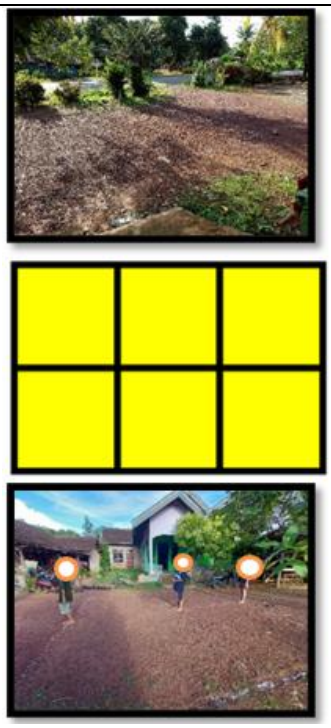
RESULTS

Based on the results of the interview (table 2) and the observation (table 3) with one of the local figures and two respondents of 6-12 years old, the game *Bahasinan* is practically associated with Mathematics. The elements of Mathematics that have been contained in the traditional game is reflected through the game area, the game procedures, the player position in each movement, and the hand movement in playing *Bahasinan*. The results of both the interview and the observation show that the traditional game *Bahasinan* can improve the affective and psychomotor capacity.

Questions	Answers
How is the shape of the area for the traditional game *Bahasinan?*	The shape of *Bahasinan* game area is usually rectangle drawn in equally proportional partition. For the partition alone, there are six rectangles or eight rectangles since this number has been the most frequently used for playing *Bahasinan*. Then, for the length of the game area, children usually use 15 x 9 meter in adjustment with the playing area or with the player agreement. *Bahasinan* can be played anywhere and children usually use sticks, stones, or chalks for drawing the lines.
Can you explain the procedures or are there are procedures that have been officially made?	First of all, players should define their team first namely the offensive team and the defensive team. Each team consists of four players and they will decide who will be in the offensive team and in the defensive team by using *hompimpa*. The defensive team should guard the *Bahasinan* game area by stepping onto the lines under his or her spot or by drifting his or her leg. Then, the offensive team should break through the defensive team completely from the front to the back and get back to the front again. If the offensive team successfully does this, then they will be awarded with 1 point. However, if the offensive team is touched by the defensive team, then the game will be suspended or stopped. As the offensive team begins the game, they should say "*Masuk Kadadas*" and when they can return to the front line they should say "*Masin*."
How is the position of the players when they play *Bahasinan*? Is there any specific position	Usually, the position of the players in defensive team is limited. They can only shift

Questions	Answers
that has been set?	to the right, to the left, or to the front. On the contrary, the position of the players in offensive team is better since they can move to the front, to the back, to the left, or to the right within the same rectangle. In *Bahasinan* game, the position of the players is certainly changing.
How is the hand movement of the players when they are playing *Bahasinan*? Is there any specific hand movement that has been defined?	The players from the defensive team usually stretches their arm and they slightly raise their left or right arm with the hands stretching forward.

Table 2: Interview Results

No	Aspects (Indicators under observation for *Bahasinan*)	Observation Picture (Documentation	Description on Observation Results
1	*Bahasinan* Game Area		In *Bahasinan* game area, the elements of Mathematics that can be found are two-dimensional figure, division and multiplication, reflection, lines, and congruency. Then, the activities of measuring and numbering in making the game area are also related to Mathematics. Both activities should always be performed whenever children want to play *Bahasinan*.
2	*Bahasinan* Game Play		The number of players and their assignment into the team in *Bahasinan* game is related to the operation of division or subtraction and there are also the activities of numbering or calculating the number of the players. In addition,




the rectangle in *Bahasinan* also contains the element of calculation as having been shown by the sequence of the rectangle and the number of defensive players that should be passed by the offensive players.
Every offensive player who has successfully passed the whole line from the front to the back to the front again will be awarded with 1 point. Based on this statement, the element of Mathematics that can be found is the operation of summation namely when the overall scores from all players in the offensive team are summed into the team score.

3 Player Position during *Bahasinan*



Judging from the position of the player during *Bahasinan*, the position of the defensive players is limited. They can only move to the left, to the right, and to the front. On the contrary, the position of the offensive players is more flexible. They can move to the front, to the back, to the left, or to the right. Learning from the movement above, the elements of Mathematics that have been contained in *Bahasinan* are translation / movement and reflection.

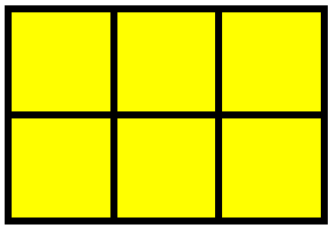
4	Hand Movement during the *Bahasinan*		Judging from the hand movement during the game, the movement made by the defensive players should be given attention. In order to defense their base, the defensive players usually stretch their arms by slightly raising their left or right arm and reaching their hand to the front. By doing so, the right angle, the acute angle, the obtuse angle, and the straight angle can be made.

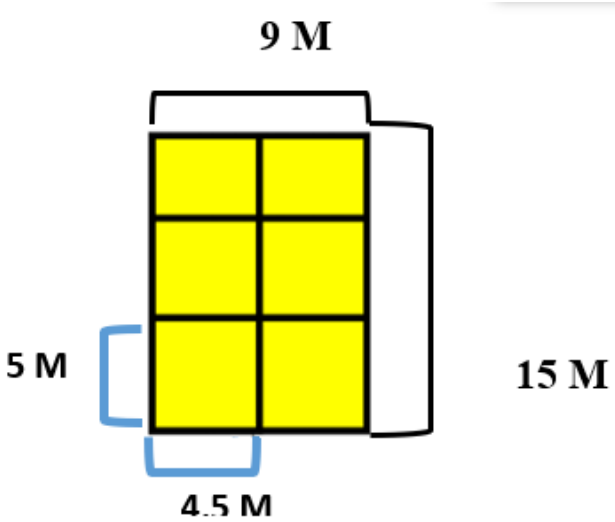
Table 3. Observation Results

Based on the results of interview, observation, and documentation, the researchers have found several findings that can be analyzed as follows.

a. *Bahasinan* Game Area

The game area of *Bahasinan* consists of several rectangles with equal size. The total size of *Bahasinan* game area is 15 m x 9 m that consists of 6 rectangles with similar size namely 5.00 m x 4.50 m.





In the game area of *Bahasinan*, the mathematical concepts that can be seen are as follows:

1) Two-Dimensional Figure

Two-dimensional figure is one of the geometrical concepts that have been recorded in the game area of *Bahasinan* (figure 1). The game area of *Bahasinan* is made of 15 m x 9 me rectangle. Every square in the rectangle has been divided into six smaller rectangles with 5.00 m x 4.50 m in size.

Figure 1: The Mathematical Concept Rectangle Over the Game Area of *Bahasinan*

2) Division and Multiplication

As having been explained, the game area of *Bahasinan* is made of 15 m x 9 m rectangle. Then, the rectangle is divided into six equal rectangles with the length divided by 3 and width divided by 2. As a result, the length of each square is 15 m ÷ 3 = 5 m and the width of each square is 9 m ÷ 2 = 4.5 m. On the contrary, the calculation can involve multiplication in which multiplication is the inverse mathematical operation of division.

3) Reflection

The square in *Bahasinan* also contains the element of reflection. This can be shown by the symmetrical shape of the game area. As it can be seen, there are symmetrical axes that cut the game area of *Bahasinan* into two equal parts (figure 2).

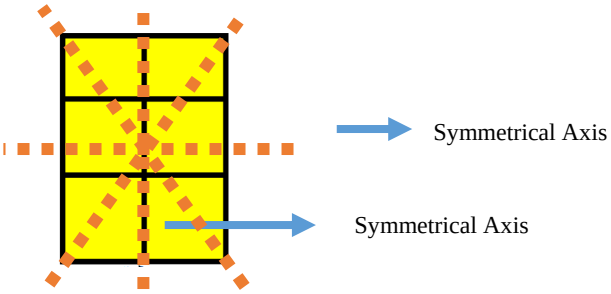


Figure 2. The Illustration of Reflection on the Square of *Bahasinan*

4) Lines

Lines refer to the indefinite clusters of nodes. The game area of *Bahasinan* has also show the lines connection, which consists of parallel, intersecting, and perpendicular lines (figure 3).

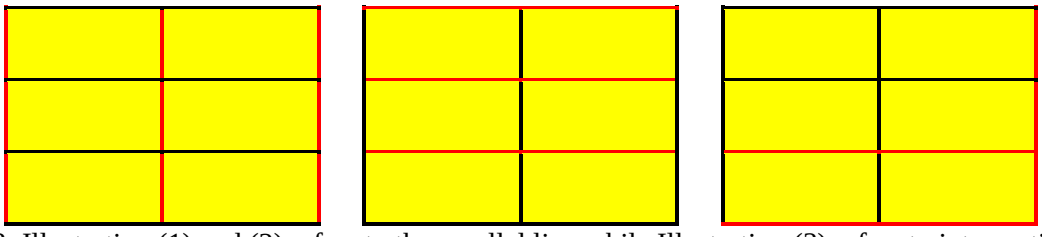


Figure 3: Illustration (1) and (2) refers to the parallel line while Illustration (3) refers to intersecting line

and perpendicular line in *Bahasinan*

5) Congruency

The squares in *Bahasinan* holds the elements of congruency. The statement is confirmed by the six squares of *Bahasinan* game area that has the same size and shape (figure 4).

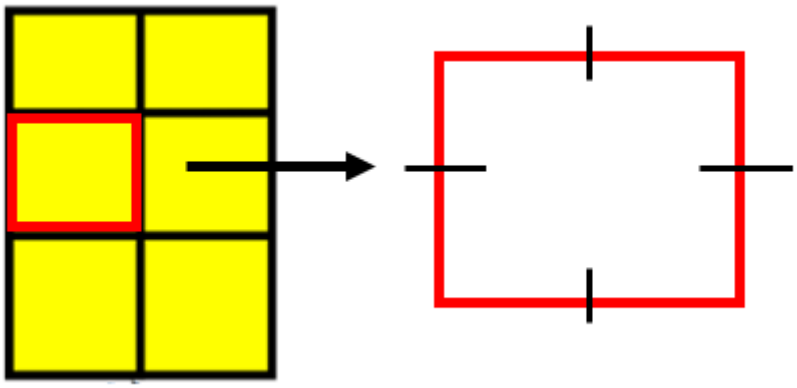


Figure 4: The Illustration of Congruency over the Square of *Bahasinan*

6) The activities of measuring and numbering are also contained in the game because the game area of *Bahasinan* should be measured and numbered first.

b. How to Play *Bahasinan*

In order to play *Bahasinan*, at least there should be six players and the six players should be divided into two groups namely the offensive group and the defensive group. The group is divided by performing *hompimpa*. The number of players in *Bahasinan* and the task division of these players are related to the activities of dividing, subtracting, numbering, and calculating the players. In addition, the square in *Bahasinan* also contains the elements of calculation, which has been shown by the sequence of the squate and the number of the defensive players that the offensive players should pass. In this regard, a player can count each square and each opponent that he or she has or has not passed. On the contrary, pertaining to the score of *Bahasinan*, the mathematical element that has been uncovered is calculation. Each offensive player who has passed the whole lines from the front to the back to the front again will be awarded with the score 1. Based on the statement, the mathematical element that has been uncovered is summation, namely when the score of each player is accumulated into the score of the team. Thus, the team with the highest score shall be the winer of the game.

c. Player Position during *Bahasinan*

Based on the position of the players during the game *Bahasinan*, the position of the defensive players is limited since they can only move to the right, to the left, or to the front. In the meantime, the position of the offensive players is more flexible since they can move to the front, to the back, to the left, or to the right. Such movement contains the concept of transformation

geometry namely translation and reflection. The transformation geometry is illustrated further through Figure 5 and Figure 6.

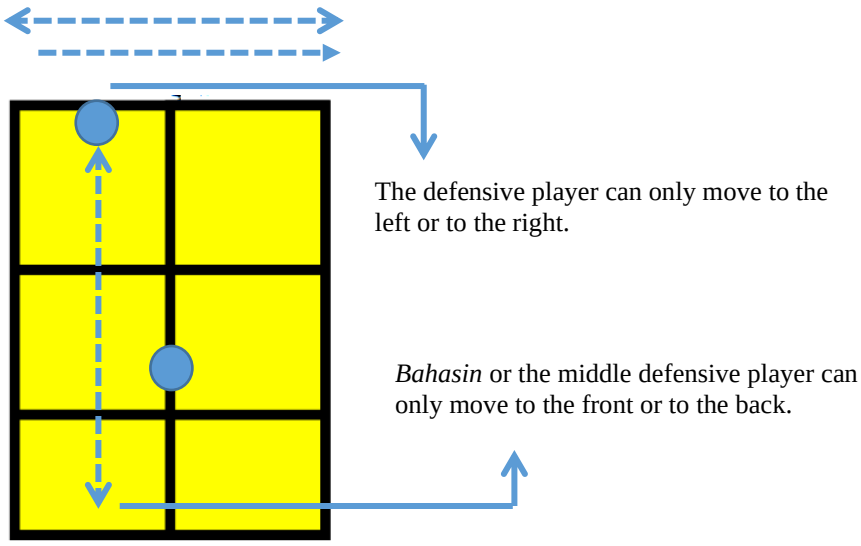


Figure 5: The Illustration of Translation on *Bahasinan* Players

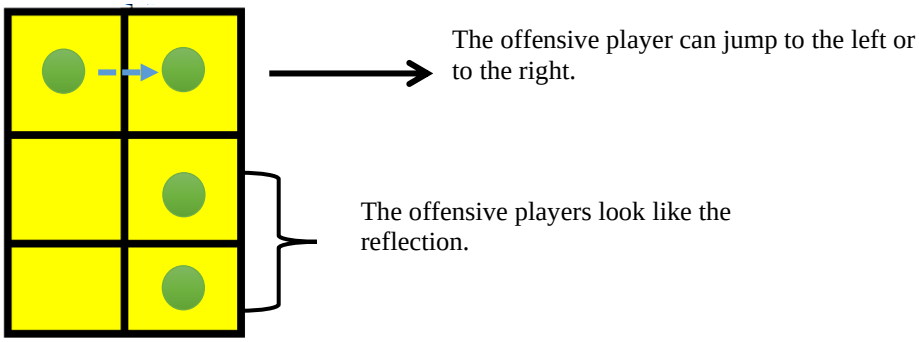


Figure 6: The Illustration of Reflection on *Bahasinan* Players

d. Hand Movement for the *Bahasinan* Players

From the results of the observation, in order to guard their opponents, the defensive players usually stretch their arms with the left arm or the right arm slightly raised as they stretch both arms to the front. Such hand movements will shape the right angle, the acute angle, the obtuse angle, and the straight angle. These angles are better illustrated in Figure 7 below.

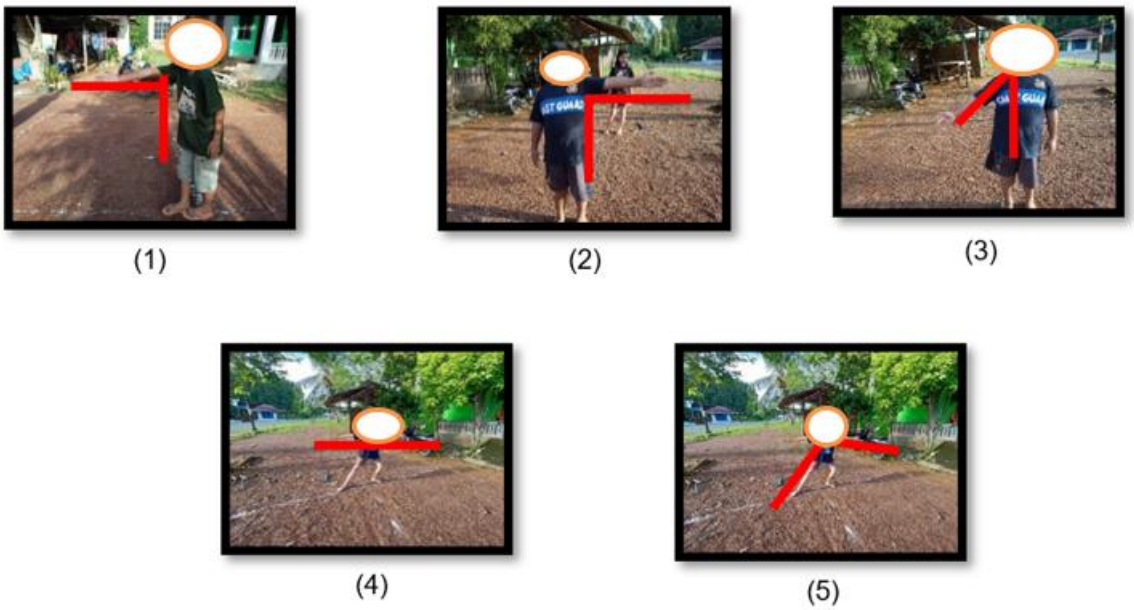


Figure 7: The Illustration of Right Angle ((1) and (2)), Acute Angle (3), Straight Angle (4), and Obtuse Angle (5)

Departing from the results of interview, observation, and documentation that have been elaborated, and also based on the results of the data analysis, it is found that *Bahasinan* holds numerous benefits. In addition to preserving the Indonesian cultural heritage, playing *Bahasinan* is definitely useful for the players. According to Achroni, the benefits of playing *Bahasinan* are namely delivering enjoyment, eliciting strategy-devising capacities, building responsibility and sportsmanship, exercising the morale, and training leadership (Een et.al, 2020). In addition, the psychomotor skills that can be improved through playing the game are strength, concentration, speed, flexibility, and endurance. Eventually, the ethnomathematical findings that have been uncovered in the traditional game *Bahasinan* can be further elaborated in Table 4.

Game Area of *Bahasinan*	In the game area of *Bahasinan*, the mathematical elements that can be seen in terms of shape is two-dimensional figures. The square of *Bahasinan* contains the mathematical operations such as division and multiplication, reflection, lines, and congruency. In addition, the game area also encourages the activities of measuring and numbering since the game area should be made by means of measurement. Furthermore, prior to the game, the players should define the location of the game area first and this activity also involves measurement.
Game Procedures of *Bahasinan*	The number of players and the division of their task in *Bahasinan* are associated with the mathematical operations such as division and subtraction; in addition,

	there are also the activities of numbering or calculating the players and the game. Furthermore, each square in *Bahasinan* contains the elements of calculation as having been shown by the size and the sequence of the square as well as the number of the defensive players that each offensive player should pass. Each offensive player who has made their way to from the front to the back to the front again will be awarded with the score 1. Based on the statement, the mathematical element that has been found in the mathematical operation name summation. Summation takes place when the score of each player is accumulated into the score of the team.
Player Position During *Bahasinan*	The player position during the traditional game *Bahasinan* is different between the defensive players and the offensive players. The defensive players can only move to the left, to the right, or to the front. In the meantime, the offensive players can more to the front, to the back, to the left or to the right. Learning from such movement, it can be concluded that the traditional game *Bahasinan* contains the mathematical concept named transformation geometry namely translation and reflection.
Hand Movement of the Players During the Traditional Game *Bahasinan*	The hand movement during the traditional game *Bahasinan* is also different between the defensive players and the offensive players. The defensive players usually stretch their arms with their left or right arm slightly raised and their hands moving forward. Such movement will shape the right angle, the acute angle, the obtuse angle, and the straight angle.
Character Education	The traditional *game Bahasinan* can be one of the tools for internalizing communality, social relationship, and teamwork.

Table 4. The Ethnomathematical Elements in the *Bahasinan* Game

DISCUSSION

We find a lot of mathematical concepts in the *Bahasinan* game. Especially in Table 2 has been shown numerous mathematical concepts in the elements of the traditional game *Bahasinan*. For example, the findings on the concept of two-dimensional figure are in line with the theory proposed by Unaenah et al., which asserts that two-dimensional figure refers to the two-dimensional objects over the planes that have been bordered by the straight line or the curve line with the concept of angle and the concept of liens in use (Een et.al, 2020). Then, the ethnomathematical findings over the concept of geometry transformation are in line with theory

proposed by Ulum, Budiarto & Ekawati, which asserts that geometry is a branch of Mathematics that studies the relationship among lines, nodes, angles, planes, two-dimensional figures and three-dimensional figures (Ulum & Ekawati, 2017). Last but not the least, the activities of numbering, defining location, and playing are also in line with the theory proposed by Sirate which asserts that ethnomathematical elements can be found in the context of daily life (Sirate, 2012). The cultural products in a community that have been forged through the traditional game such as *Bahasinan* contains mathematical concepts known as cultural-based mathematics or also known as Ethnomathematics. After we find many mathematical concepts related to the language, the next task is how to integrate them in learning to make it more meaningful. The application of ethnomathematics can be a means of motivating, stimulating students, and overcoming boredom and learning difficulties, so that learning becomes more meaningful (Gazali, 2016).

CONCLUSIONS

Bahasinan is one of the traditional games that can be played in groups. This traditional game is integrated into the elements of Mathematics such as the concept of geometry and numbers. The integration of Mathematics into culture itself is known as Ethnomathematics. The elements of ethnomathematics for the concept of geometry and numbering in the traditional game *Bahasinan* can be reviewed in terms of game, player numbers, game procedures, and scoring system. The concepts of geometry that has been found in the traditional game are namely two-dimensional figure, translation, reflective, lines, and congruency. On the contrary, the concepts of numbers that have been found in the traditional game are namely summation, subtraction, multiplication, and division. with the presence of the current study, the ethnomathematical approach can be developed within the mathematical learning in the schools. These findings can be used as an introduction to learning materials by teachers, so that students appreciate the usefulness of mathematics in everyday life. Departing from the statement, the future researchers are suggested to explore the association between Mathematics and other traditional games, especially in the context of Indonesian culture, on a wider basis.

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Appendix/attachment

About *Bahasinan*

One of the traditional games that can be found in South Borneo, specifically in Gunung Makmur Village, the Regency of Tanah Laut, is *Bahasinan*. *Bahasinan* itself is a traditional game that should be played in teams. There are two versions about the origin of the game. First, the name *Bahasinan* is derived from English phrase *Go Back to the Door*, which means that the offensive player should return to their based through the door. Second, the name *Bahasinan* is derived from two words namely *Baha* and *sin*. *Baha* means free whereas *sin* means spear. Being put together, the name *Bahasinan* means running free like a spear; this also explains why the middle player is known as *masin* (Sujarno et.al., 2011). This traditional game is known under many names in several Indonesian regions. The name *Bahasinan* is known in Java and South Borneo but in Jakarta this traditional game is known as *Galah Asin* or *Galasin*. In Natuna, this traditional game is known as *Galah* while in Riau it is known as *Galah Panjang*. Furthermore, in South Sulawesi this traditional game is known as *Masallo*. In Toba, this traditional game is known as *Margala*. Eventually, in Aceh and Bengkulu this traditional game is known as *Hadang* (www.anakmandiri.org).

Just like the other traditional games, *Bahasinan* consists of game arena, regulations, and players. In this traditional game, many aspects related to mathematical concepts and materials can be found. For example, the arena of *Bahasinan* displays the mathematical concepts and materials. The arena itself looks like rectangle and therefore it can be concluded that *Bahasinan* has the concept of plane and geometry. Based on this explanation, the researchers would like to discuss the game area (fiqure 8), the game regulations, the player position, and the hand gesture in *Bahasinan* from the perspective of mathematical concepts.

Figure 8: *Bahasinan* Game

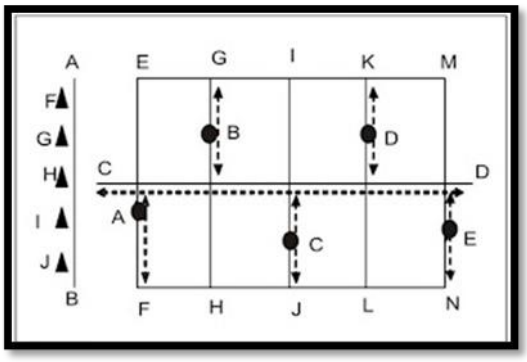

Figure 9: *Bahasinan* Game Scheme

Note from figure 9:

- Line ab : Baseline for the team of players (Playing Team / *Team Laku*)
- Line cd : *Hasinan* Line
- Line ef, gh, ij, kl, and mn: Garis ef, gh, ij, kl, mn : Tranverse
- ←- - -→ : Guarding line for the defensive team
- ▲ : Players of the offensive team
- ● : Players of the defensive team

Bahasinan is a traditional game of Banjarmasin people especially in the Gunung Makmur Village, the Regency of Tanah Laut. Prior to the era of gadget, the children were very fond of playing the traditional game. The traditional game puts the strategy, the agility, and the physical strength of the playing children on a test. *Bahasinan* is played over a field with 6 rectangles (figure 10) as the playing ground.

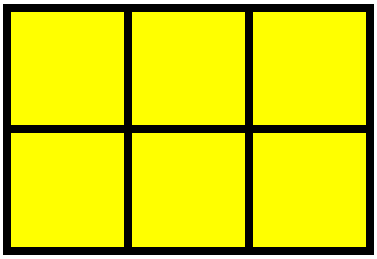

Figure 10: Playing Game of *Bahasinan*

Every line is guarded by one player from the opponent team (Defensive Team). The number of the members for each of the defensive and the offensive team is five people or more.

The defensive team guards the horizontal line and the vertical line. One player may only guard the line under his or her authority. Then, there is a long horizontal line in the middle of the playing field. This line is usually guarded by the best player of the defensive team. The offensive team may move freely inside the rectangle as long as he or she is not touched by the player of the

defensive team. The offensive team starts playing from the start line and they have to break through the defense line of the defensive team and return to the start line (figure 11). Every successful movement is awarded 1 point.

Figure 11: Situations During the *Bahasinan* Game

Then, the offensive team may not return to the previous rectangle as the move forward. If the member of the offensive team violates this requirement, then the given team member will be suspended. The member of the offensive team who have been touched by the member of the defensive team for three times will lose the game and, thus, the offensive team should be the defensive team and vice versa. Furthermore, two members of the offensive team may not be in the same rectangle. This situation is termed "*Katuyung Gambir Dua*" and the consequence is that both members are suspended. On the national scale, the traditional game *Bahasinan* is known as "Hadang" and the duration for the traditional game is 2 x 15 minutes.

Despite its wonderful characteristics, the ex of the traditional game has been forgotten. The existence of the traditional game has been slowly replaced by the digital games, which development has been proliferating as the society becomes more individualistic, whereas in the practice the traditional game delivers numerous benefits. In her research, Ekayati has found that the *Bahasinan* game itself has influence over the intrapersonal and interpersonal intelligence of the children (Ekayati, 2015). In addition, playing *Bahasinan* can be one of the ways for preserving the Indonesian traditional games. This culture can be preserved by certain manners, one of which is integrating the traditional game into the learning practice. In learning, the culture of playing *Bahasinan* is closely associated with Mathematics. Mathematics is a science which object is abstract but its practice is practically integrated into the daily life and this can be found in the culture within society (Riyanto, 2017).