



KARAWITAN LITERATURE IN THE PERSPECTIVE OF ETHNOMATHEMATICS OF LITERATURE

Erna Istikomah¹, Sukisno², Suwardi³, Suryobintoro⁴, Fatkur Rohman Nur Awal⁵
 Yogyakarta State University, Special Region of Yogyakarta, Indonesia, Jl. Colombo No.1,
 Karangamalang, 55281

E-mail: erna.istikomah@uny.ac.id¹, sukisno@uny.ac.id², suwardi_fbs@uny.ac.id³,
suryobintoro@uny.ac.id⁴, fatkurrohman.awalin@uny.ac.id⁵

ABSTRACT

'Sastra karawitan' is Javanese literature that is composed as verses in gamelan music. Like most literary works, 'sastra karawitan' has a message to convey to its audience. One type of message contains mathematical elements. 'Karawitan literature' that contains mathematical elements is interesting to study from the perspective of cultural anthropology. Cultural anthropology in this study focuses on the representation of literary texts that contain mathematical elements in karawitan culture. The data of this research is in the form of literary texts in 'karawitan' art. Studied through a qualitative descriptive approach with a cultural anthropology perspective, which was analyzed using triangulation techniques. The research steps were: 1) identification of 'karawitan literature' that reflects literary mathematics; 2) heuristic reading based on aesthetic considerations of literary mathematics; 3) hermeneutic interpretation of 'sastra karawitan' that contains literary mathematics, 4) significance (the meaning) to understand aspects of life wisdom in the work, and 5) drawing conclusions. The results show that mathematics in 'sastra karawitan' is found in four forms, namely: 1) 'sulukan' a song chanted by the puppeteer, 2) 'bawa' a single song to begin a 'ginging', 3) 'sindhenan' a song sung by a woman called 'pesindhen', and 4) 'jineman' an irregular form of song, usually adapted to the purpose of the performance. Based on the analysis, it can be concluded that ethnomathematics in karawitan literature is divided into three groups, namely: 1) organomathematic homology of 'sastra karawitan' which contains life parallels; 2) ethnomathematical cultivation of 'sastra karawitan' which contains a reflection of life with local mathematical expressions; and 3) zooanthropological ecomathematics of 'sastra karawitan' which contains mathematical expressions with environmental nuances, and is seasoned with animal aspects in the text.

Keywords : Javanese literature, karawitan, literary ethnomatics.

ABSTRACT

Sastra karawitan merupakan karya sastra Jawa yang digubah sebagai syair dalam alunan musik gamelan. Sebagaimana umumnya karya sastra, sastra karawitan memiliki pesan yang disampaikan kepada penikmatnya. Salah satu jenis pesan tersebut mengandung unsur matematika. Sastra karawitan yang mengandung unsur matematika tersebut menarik dikaji dari sudut pandang antropologi budaya. Antropologi budaya dalam penelitian ini menitikberatkan aspek representasi teks sastra yang memuat unsur matematika dalam budaya karawitan. Data penelitian ini berupa teks karya sastra dalam seni karawitan. Dikaji melalui pendekatan deskriptif kualitatif dengan sudut pandang antropologi budaya, yang dianalisis dengan teknik triangulasi. Langkah-langkah penelitian berupa: 1) identifikasi sastra karawitan yang mencerminkan matematika sastra; 2) membaca secara heuristik atas dasar pertimbangan estetika matematika sastra; 3) penafsiran secara hermeneutik terhadap sastrawan karawitan yang bermuatan matematika sastra; 4) signifikansi (pemaknaan) untuk memahami aspek kebijaksanaan hidup dalam karya tersebut, dan 5) pengambilan simpulan. Hasil penelitian menunjukkan bahwa matematika dalam sastra karawitan ditemukan dalam empat bentuk, yaitu: 1) 'sulukan' lagu yang dilantukan oleh dalang, 2) 'bawa' nyanyian tunggal untuk mengawali sajian dalam 'gending', 3) 'sindhenan' sajian lagu yang dinyanyikan oleh seorang wanita yang disebut 'pesindhen', dan 4) 'jineman' bentuk lagu yang tidak beraturan, biasanya disesuaikan dengan maksud pementasan. Berdasarkan analisis dapat disimpulkan bahwa etnomatematika dalam sastra karawitan terbagi dalam tiga kelompok, yaitu: 1) homologi organomatematika sastra karawitan yang memuat kesejajaran hidup; 2) kultivasi etnomatematika sastra karawitan yang berisi suatu refleksi kehidupan dengan ekspresi matematika lokal; dan 3) ekomatematika zooantropologi sastra karawitan yang berisi ungkapan matematika yang bernuansa lingkungan, serta dibumbui dengan aspek hewan dalam teks tersebut.

Kata kunci: sastra Jawa, karawitan, etnomatika sastra.



INTRODUCTION

Mathematics, literature and culture meet in ethnomathematics. The term ethnomathematics introduced by expert mathematics Brazil D'Ambrosio on year 1997. According to Rachmawati (2015) Ethnomathematics is defined as mathematics that... practiced by cultural groups, such as urban and rural communities, ethnic groups laborer, children from group age certain, public customs, And others. In linguistics, ethnomathematics originate from prefix "ethno" Which have meaning wide related with process social, including with Language, idiom, custom customs, saying And symbol. Say main "mathematics" is knowing, explaining, understanding and doing things like: measure, classify, model and draw conclusions. The word tick comes from say technology which means technique. (Marsigit, 2016, p.139) to argue that term ethnicity describe norm, trust, And characteristics physical. In addition That, D'Ambrosio, Mathematics, covers view about arithmetic operations, sorting, derivation, and modeling. From both points of view It can be concluded that ethnomathematics is a special cultural element that is used in activities and human life as well as related with mathematics learning . However existence ethnomathematics often No realized by for educator Because grow And develop outside a culture. The form of ethnomathematics itself can be anything, depending on what is being developed and owned by the group itself. These forms can be mathematical concepts inheritance culture, like inscription And temple, tools traditional, And game traditional, or can Also is results of human activities, like measurement or arithmetic.

Ethnic mathematics or ethnomathematics is a meeting place that connects culture And mathematics For help understand And connect ideas mathematics Which different with activity social And practical. For That study mathematics in culture becomes very important because mathematics is a social construction, a cultural product, and is at in culture (Bishop, 1988; Gerdes, 1996; Dowling, 1998). In this case, culture is related to art, especially the art of karawitan which uses... gamelan instruments. In karawitan there are structures, literature, rhythms, and layouts. Structure emphasize the pattern of playing the instrument, literature as a storyline presented in the form of the song (bawa, gerongan, sindenan, and sulukan), rhythm is related to tempo, whereas screen related to speed is tempo.

Karawitan cannot be separated from gamelan instruments which have several sizes the shape and size limits of the gamelan. Gamelan musical instruments have element Geometry namely studies Which learn room get up with focus on measurement blade-like shape and the pencon (colotomic), the long and short position of the blade, and the sizes small circles, flat spaces in the form of rectangles and circles, and spaces resonance in the form of a tube and a circle. The size of the gamelan that exists in society differ from one another, including the quality of the materials, even on average made of iron. Folk art is identical to the countryside, so that the sense of togetherness for love culture becomes the benchmark Spirit mutual cooperation its citizens. Omar Rich (1981) state



that art people still is art public rural Which nature relational And consistent in development ethno- mathematical Which involving practice culture. Wrong One Which studied is art gamelanJava. For example, the kendang musical instrument is one of the arts of playing Javanese society. The Kendang musical instrument has undergone many improvements, not only in terms of appearance and materials, but also in terms of playing techniques. There are on gamelan ensemble Java, there is Which pipette, there are also those who are stylish jambe symmetrical . Ethnomathematics is used as a perspective to help in observing and understand mathematics as an integral part of life culture, which includes about concepts, language, traditions, and social context. Whereas according to Davidson (in Teak et al, 2019: 278) ethnomathematics is a technique explain and understand various cultural contexts. Mathematics ethnicity or ethno mathematics is integration culture to in mathematics learning (Alfonsa, 2016). Ethnomathematics includes mathematical ideas, idea and practice developed mathematics by all culture (Barton, 1996).

Ethnomathematics research in karawitan is quite popular, because the research examines mathematics, literature and karawitan (culture) in its research steps. So it would certainly be interesting if ethnomathematics were applied in karawitan literature.

Literature Musical Instruments is work literature Which composed in melody music gamelan. Karawitan literature is a literary work reflected in karawitan. Karawitan is a gamelan sound game accompanied by human voices that produce smooth rhythms. Karawitan writers usually insert pragmatic literary messages to listeners, viewers, and connoisseurs. The messages conveyed use mathematical elements , therefore we study karawitan literature from the perspective of literary ethnomathematics. Based on the background of the problem, in this study we intend to reveal the relationship between society, water and literature in karawitan literature through reception culture.

RESEARCH METHODS

Study This is study descriptive qualitative with use cultural anthropology perspective. Namely, an interdisciplinary perspective between literary anthropology, and Javanese literature gamelan. This study uses primary and secondary data. Primary data was obtained through in-depth interviews while secondary data in this study were obtained through literature studies. Data primary text script ancient Which used in literature gamelan, confirmed with interviews with puppeteers, singers and musicians; secondary data, all related data with study.

Type data Which obtained in for become two that is data primary And data secondary. Data Primary data was obtained through in-depth interviews while secondary data in this study through observation and literature study. *In-depth interviews or In-Dept interviews* are technique in study qualitative. A Respondent or group Respondent communicate materials and encourage free discussion. By interview deep to informant, researcher can know reason Which Actually from Respondent take decision like That



(Ardianto, 2010: 61) . Guidelines interview usually does not contain detailed questions, but just an outline of What data or information do you want to get from informants that can be developed later? with notice situation interview. In matter This informant requested For tellre-examine the text that has been consumed. Data collection is carried out by means of in-depth interviews with puppeteers, singers and musicians as actors in karawitan literature. The advantage of this method is that you can directly see nonverbal behavior and verbal (Kriyantono. 2009: 108-109). Literature study is an activity that does not can be separated from a theory that underlies the problem. The field to be studied can be found by conducting a literature study. In addition, a researcher can obtain information about researches similar Which There is in relation to his research.

Steps from analysis reception according to Sulistyani (2011: 5-6) is as following: a) Identification And consider objective from analysis reception. On stage This Researchers identify why the topic was chosen and why it needs to be analyzed. reception. b) Collection data. Method collection data Which will used on This research is an in-depth interview and literature study. c) Data analysis. Data results From the interview a transcript was made, then analyzed by considering several thingsmatter Which covering process *decoding* message. d) Categorization audience. Category Which formed after stage analysis Then compared to with category audience For grouped into three audience groups, namely whether they are included in *the dominant reading*, *oppositional reading* , or *negotiated reading* . e. Conclusion After all After the steps are passed, the researcher makes a conclusion from the research data that has been collected. managed the.

Data Validity Techniques In ensuring validity and validation in research In this case, researchers use various data sources. The data used by researchers includes data that researchers obtain from the research location and data obtained by researchers outside the location research. In this research, the validity method that the researcher used was triangulation. source data. Triangulation is technique inspection validity data Which utilisesomething Which other outside data That For needs checking or as comparator to the data (Ghony and Almanshur, 2014:322). While source triangulation is a technique to compare and double-check the degree of trustworthiness of the information obtained through different times and tools in qualitative research (Patton in Moleong, 2010:330).














RESULTS AND DISCUSSION

The research results show that mathematics in karawitan literature is found in four forms , namely: (1) 'sulukan ' , a song sung by the puppeteer; (2) ' bawa ' a solo song to start the performance in 'gending'; (3) 'sindhengan' a song performance sung by a woman called 'pesindhengan'; and (4) ' jineman ' an irregular song form, usually adapted to the purpose of the performance . Based on these four forms, the data was analyzed to determine the elements inherent in the karawitan literature.

1. Homology Organomathematics of Karawitan Literature

Homology of organo- mathematical literature of karawitan means the perspective of understanding the text in karawitan literature that contains parallels in life. Parallels in life are always sought by everyone. Parallels can also be called balance (harmony) of the cosmos. According to Willis (Barker, 2005:339) homology is the relationship between culture and objects, artifacts, institutions, and other systematic practices that surround it. When cultural items such as organology and mathematics of karawitan literature go hand in hand with the wayang or ketoprak plays that are accompanied, it means that cultural homology occurs.

In the science of gending, of course, between one organ and another, the sound is very distinctive. Each instrument produces a different sound, when struck it will produce a cultural homology called rampak. The rampak sound is the ideal in human life. The following is a description of the various organologies of Javanese gamelan related to ethnomathematics.

NAMA ALAT	IDENTIFIKASI	NAMA ALAT	IDENTIFIKASI
Kendang 	a. Lingkaran b. Tabung	Ketuk kempyang 	a. Lingkaran b. Tabung c. Bola d. Kerucut
Rebab 	a. Trapesium	Kempul gong 	a. Lingkaran b. Tabung
Gender barung 	a. Persegi panjang b. Balok	Balungan 	a. Persegi panjang b. Balok
Gender penerus 	a. Persegi panjang b. Balok	Gambang 	a. Persegi panjang b. Trapesium c. Prisma
Bonang barung 	a. Lingkaran b. Tabung c. Bola	Siter 	a. Trapesium b. Segitiga
Bonang penerus 	a. Lingkaran b. Tabung c. Bola	Suling 	a. Lingkaran b. Tabung
Kenong 	a. Lingkaran b. Tabung c. Bola d. Kerucut		



(Figure 1 Organology of Javanese Gamelan, Nuryadi and Kholifa, 2020:145)

From the picture 1, each gamelan organ is related to geometry. Geometry is the science of spatial structures in mathematics. In the gamelan organ, whether we realize it or not, it contains aspects of organomathematics. Organomathematics is the science of organs or gamelan anatomy that describes ethnomathematics. When the organ is played and harmonized with the literary texts of karawitan, it will produce a harmonious sound called cultural homology. Cultural homology in the perspective of organo- mathematical homology of karawitan literature karawitan literature can be interpreted as a significance of meaning that is parallel, in line, in line, and precise.

2. Cultivation of Ethnomathematics of Karawitan Literature

Cultivation of ethnomathematics is useful for increasing cultural altruism. Each community has a tradition of cultivation by using ethnomathematics in the creativity of karawitan literature. Karawitan literature is a genre of Javanese literary works which is the result of the creation of artists and aesthetic writers. One of the genres of karawitan literature that is rich in ethnomathematics content that inspires altruism includes: (1) *jineman*, (2) *gerong*, (3) *umpak-umpak*, (4) *lelagon*, and (5) *senggakan*. This karawitan literature is rich in cultivation content that can boost the altruistic spirit. The altruistic spirit is the personality of a nation that prioritizes responsibility for others, society, and the country.

Between the altruistic spirit and ethnomathematical cultivation in karawitan literature often side by side. Both altruistic and cultivation are anthropological expressions of human cultivation that respects the situation. Cultivation from the English language *cultivation* as a reflection of cultural anthropology. Cultivation means the result of human cultivation that drives certain actions. Ethnomathematic cultivation of karawitan literature is a reflection of life that uses local mathematical expressions. Humans have cultivation, to create, criticize, appreciate, praise, and rebel. I borrowed this term from the idea of an English poet named Coleridge (Jenks, 2013:17-19). He actually took part (1772-1834) in bringing up the context of anthropology of karawitan literature. The anthropology of karawitan literature can be used to discuss the issue of ethnomathematical cultivation that increases cultural altruism. Cultivation in the ethnomathematical expression of karawitan literature in the *jineman* genre, in addition to describing cultural intelligence, is also a reflection of personality.

This cultivation is often manifested in the ethnomathematics of karawitan literature. Ethnomathematics of karawitan literature is an expression of aspects of life, namely local mathematics in karawitan literature. Ethnomathematics of karawitan literature in the form of *jineman* can also be used to accompany wayang kulit performances, especially the three gara-gara scenes. Ethnomathematics of karawitan literature is also useful for empowering the altruistic character of culture. *Jineman Uler*



Kambang slendro manyura is an entertainment tale that also reflects the teachings of cultivation and altruistic character. The following are the lyrics of *Jineman Uler Kambang* Slendro Manyura by Ki Narto Sabdo, which contain ethnomathematics cultivation in karawitan literature. *Jineman* is a poem sung by several people, accompanied by the sound of gamelan. From the following *jineman*, it is clear that it contains the context of ethnomathematics cultivation of literature that can improve altruistic personality.

Jineman Uler Kambang Ki Narto Sabdo

*Tirta-tirta wijiling angkasa
sayuk rukun rukun karo kancane
Ja lali lo mas kowe
gotong royong nyambut gawe*

*Rama nyenyuwuna mrih kasembadaning sedya
kinclong alah-alah kinclong
kinclong guwayane
Mubyar murup mencorong katon tejane
Gones*

*Ya rama ramane dhewe
kawi lima putrane dahyang Durno
Pancasila dhasaring nagri utama*

*Ala ora pati ayu nanging
ayu nanging nggregetake
yo la yo mas yo la yo mas*

*Man eman man
eman eman eman
rama*

Lir puspita wernaning kusumeng pura

*Brambang mas sak sen lima
berjuang labuh negara
Brambang mas sak sen telu
berjuang dimen bersatu*

yo la yo mas

*Ora butuh godhong kayu
ora butuh godhong kayu
butuhku tentrem rahayu*

*Ora butuh mas kae kae
butuhku tentrem atine*

above *Jineman* poet, apparently uses the ethnomathematics cultivation context of karawitan literature in the form of wangsalan. The aesthetics of wangsalan are used to obtain the aesthetics of life wisdom about altruistic individuals. The expression of cultivation and at the same time altruistic appears in wangsalan which reads: *kawi lima putrane dahyang Durno*

Pancasila dhasaring nagri utama .

This expression is a cultural aesthetic as a human cultivation to be able to become a human being who acts altruistically to the nation and state. The expression *kawi lima*, is a wangsalan that contains a sampiran *kawi* language of the number five. From the perspective of ethnomathematics cultivation, this expression provides the concept of the number five in *kawi* language is *panca*. So in the contents (bars) of wangsalan the word *Pancasila* appears as the basis of the state. This also provides provisions for humans to improve their altruistic personality by adhering to the values of *Pancasila*.

From the delivery of ethnomathematics of karawitan literature in the *jineman*, it provides a reference so that humans live willingly to try culturally to uphold *Pancasila*. The ethnomathematics that appear in the *jineman* are in the form of unique numbers that refer to the five principles of *Pancasila*. In the *jineman* there is cultivation, namely human cultivation so that their lives adhere to the foundations of the state. This means that in the *jineman* there is a value of life wisdom about altruism. Through this expression, anyone who listens to and watches the puppet with the chanting of the Uler Kambang *jineman* is expected to be able to take the message of cultivation so that humans have a noble character (altruistic).

These various cultivations appear in *jineman* which contains the ethnomathematics of karawitan literature . *Jineman* is a song that is sung by more than one man or woman at a regular tempo in the piece. *Jineman* can also be used to accompany shadow puppet and ketoprak entertainment.

3. E. Mathematics Zooanthropology Literature Karawitan

Ecomatematics of zooanthropology of karawitan literature is a perspective of the latest literary text study. Ecomatematics of zooanthropology of karawitan literature is a perspective of understanding karawitan literary texts that have ecological, mathematical, and zoological nuances. The integration of these three scientific fields forms a transdisciplinary study. Transdisciplinary is a combination of two or more different



scientific fields of study, namely between humanistic with exact. Ecomathematics zooanthropology karawitan literature means mathematical expressions that have environmental nuances, and may also be spiced with animal aspects in karawitan literary texts. This can be observed in the texts of dolanan songs in karawitan. Dolanan songs often use ecological, mathematical, and zoological expressions to make them easy for their supporters to remember.

Through the study of Ecomathematics of zooanthropology of karawitan literature, ecological, mathematical, and zoological messages can be revealed to sow certain ideas. This eclectic and holistic idea can combine the messages of life that are aspired to. Karawitan literature is an expression of ideal human desires. Included in the human environment are animals, which are combined with mathematical expressions. Mathematics and animals clearly pragmatically surround human life. Literary pragmatics is an understanding of the applied aspects of karawitan literary works in life. Pragmatics can be combined with other perspectives, which in Swirski's view (1996:60-72) as a new transdisciplinary study, need to pay attention to context. Context is an arena for interpreting literary works to achieve literary pragmatics. The ecological, mathematical, and animal contexts in the texts of dolanan songs can reflect all the desires of human life.

local Javanese literary works, there is the literature *memayu hayuning bawana*, which can pragmatically maintain the harmony of inner life. Dolanan song works in karawitan literary texts can voice environmental salvation (Endraswara, 2016:352). Environmental safety that is achieved in an environmentally friendly way through literary texts is a manifestation of the Javanese mystical concept called *memayu hayuning bawana*. Dolanan song texts that contain the Javanese mystical concept of *memayu hayuning bawana* are works that contain ecological, mathematical, and zoological threads. The following are works that reflect messages about environmental, mathematical and zoological harmony.

TIKUS PITHI

tikus pithi

duwe anak siji

cicit cuwit cicit cuwit

si tikus mangani pari

(Hartini dan Maruti, 2016:74)

PITHI RAT

pithi mouse

two little children

squeaky squeaky squeaky squeaky

the rat eats the stingray

(Hartini and Maruti, 2016:74)



The poem (tale) of the game tells about ecology, mathematics, and zoology. Ecology, related to the home environment that is usually used for the life of the pithi rat. The pithi rat is a unique animal. There are white pithi rats, usually interesting in their movements. The mathematical expression is the use of the words "duwe anak siji". This means that the pithi rat has one child. What is unique is that for villagers (farmers) the pithi rat is an ecological enemy because it often eats rice.

The text of the Tikus Pithi dolanan song is a form of karawitan literature. The text is in the form of a lancaran gending. Lancaran usually appears in gamelan art, which is used to accompany wayang, ketoprak, ludruk, and so on. Karawitan literature in the form of lancaran is rich in ecological, mathematical, and zoological pragmatic messages. The ecological message is that humans should guard against environmental hazards, regulate rice storage, so that it is not disturbed by the Pithi rat. The Pithi rat is present as a balance of human life. The Pithi rat, mathematically refers to the biological concept, which is always increasing by one. The breeding of Pithi rats in the home environment clearly gives a danger signal to rice storage.

To capture the message of environmental harmony, it can be combined with the perspective of literary anthropology (Endraswara, 2013:1-3), especially so that humans are culturally creative. This creation is related to humans being able to protect the environment, due to the increasing number of pithi mice. From this study, it means that the combination of ecology, mathematics, zoology, and literary anthropology, gives rise to the perspective of eco-mathematics of zooanthropology of karawitan literature. This perspective is to explore the pragmatics of memayu hayuning bawana literature, in order to find the context of harmony in life. Harmony is the balance of life. The balance of life will be achieved when the needs of life are met in a balanced way. Balanced means in harmony, in tune, and in line. In addition to pithi mice, in the text of lelagon dolanan, there are also other animals in the human environment, namely cats. The following lancaran song describes cats in human life.

KUCINGKU TELU

*kucingku telu
kabeh lemu-lemu
sing siji abang
sing loro klawu
meong, meong. . .
tak pakani lonthong
adhiku seneng
kancaku ndhomblong*
(Hartini dan Maruti, 2016:74)



At first glance, the lancaran poem about the animal only informs about the existence of cats. However, in fact, the poet of karawitan literature wants to offer how close humans are to animals. In an ecological context, humans are often close to a cat. The number of cats was initially three (telu) to present the aesthetics of "lemu-lemu." The lemu cat means fat. This symbolizes a state of prosperity. There are also two klawu-colored cats. The numbers 3 and 2 are mathematical expressions. The connotation of the numbers three and two, in literary texts can have various meanings.

Contextually, the number of cats appears to build ecological, zoological, and anthropological aesthetics. The meaning of the cat legend is a reflection of human behavior that must faithfully keep cats, as a form of behavior, the term *memayu hayuning bawana* is indeed not clear where it comes from. However, this term is already very popular in the circle of spiritual literature observers. The literature of *memayu hayuning bawana* will pragmatically lead to an understanding of human spirituality to appreciate the environment wisely. The work needs to be interpreted from the perspective of eco-mathematics of zooanthropology of karawitan literature, so that the work has a clear role for its readers.

In this regard, Elkjaer and Simpson (2006:1-3) stated that literary pragmatics has the insight that text interpretation is related to the practical impact of literary works. The practical impact of literary works is dynamic and symbolic. Interpretation can be related to the environment and zoology. Interpretation is always related to humans as cultured beings. The following is a dolanan song with a smooth pattern that is similar to the legon *Cublak-cublak Suweng*.

SAPI TELU

sapi-sapi telu
sing siji tanpa sungu
sok nyrudug seneng drengki
mring sapi liya wani
sir sir pong sapi ompong
sir sir pong wudel bodong

(Grup WAG Apebskid, Endraswara, 10 April 2024)

COW EGG

egg cows
the one without the sungu
pretending to be happy to attack
cow's milk
sir sir pong the toothless cow
Sir Sir Pong Wudel is a fake

(Apebskid WAG Group, Endraswara, April 10, 2024)



The Lelagon Smoothan poem depicts aspects of animals, namely 3 cows. The number three is certainly not a coincidence in literary texts. The three cows are a symbol of bad ethnic life, namely cows who like to have a spiteful character. Envy is an insolent character in life. Cows with a spiteful character usually like to ram other cows. A cow's spiteful disposition can be dangerous. Usually such a cow is a picture of a human who likes to see other people in trouble, troubled and miserable. Therefore, the cow likes to punish, give sanctions, and sometimes likes to kill other cows.

The world of such cows is of an uncultured character. The world of spiteful cows is contrary to the concept of *seducing Hayuning Bawana*. Everyone's default must be there. Innateness is inner. Buwana is a big universe. The big universe is also related to the ecological world within it. If humans already have spiteful cows, there will never be a sense of security and comfort. This only shows three cows, even though in fact there are intelligent cows who should have a wise character. However, the inherent reality is difficult to manage. Bawana is a place for humans to be creative, so there are people who envy each other, that's animal nature. Humans who are able to slaughter spiteful cows, with the character of acceptance, patience and trust are the most ideal weapons .

CONCLUSION

Gamelan literature in the perspective of ethnomathematics of literature is a manifestation of eksasta in Javanese culture. Based on the analysis, it can be concluded that ethnomathematics in gamelan literature is divided into three groups, namely: 1) homo organomathematics of gamelan literature which contains parallels of life; 2) ethnomathematics cultivation of gamelan literature which contains a reflection of life with local mathematical expressions; and 3) zooanthropological ecomathematics of gamelan literature which contains mathematical expressions with environmental nuances, and is spiced with aspects of animals in the text. However, it does not rule out the possibility that there is a development of types of gamelan literature that have mathematical elements, and also increase with their classification.



REFERENCES

- Endraswara, Suwardi..2016. *Anthropology Literature Java* . Yogyakarta: Morpholingua.
- Ardianto Dr. Elvianaro. 2010. Research Methods for Quantitative and Analytical Public RelationsQualitative. Bandung: Symbiosis Media Records.
2013. *Methodology study Anthropology Literature*. Yogyakarta: Wave.
- Falah, MF, Marhayati, M., & Fa'ani, AM (2022). Arithmetic Sequence Patterns in Smooth Gending Rhythm Beats in the Tembung Dolanan Gamelan Musical Instrument Art. *Delta-Pi: Journal of Mathematics And Mathematics Education* . <https://doi.org/10.33387/dpi.v11i1.4161>
- Fauzi, A., & Lu'luilmaknun, U. (2019). Ethnomathematics in Dengklaq Game as a Media for Learning Mathematics. *Aksioma: Journal of Education Study Program Mathematics* . <https://doi.org/10.24127/ajpm.v8i3.2303>
- Fajarianty, MM, Pramudita, AF, & Ningrum, MP (2022, December). Ethnomathematics on Traditional Musical Instruments Kendang in Javanese Gamelan Art by Linking Mathematical Concepts. In *Proceedings of the National Seminar on Mathematics and Mathematics Education* (Vol. 7, pp. 245- 265).
- Ghony, M Djunadidan Fauzan Almanshur. 2014. Research Methodology Qualitative. Yogyakarta: Ar-Ruzz Media.
- Iser, Wolfgang. 1987. *The Act of Reading: A Theory of Aesthetic Response* . United States of America: The Johns Hopkins University Press Baltimore and London.
- Mr. Rahmat. 2009. Technique Practical Research Communication: Accompanied by Example Practical ResearchMedia, Public Relations, Advertising, Communication, Organization, Communication Marketing. Jakarta: Golden Preface Media Group.
- Moleong, Lexy. 2010. Methodology Study Qualitative. Bandung: PT. Teenager Rose Work
- Osada, SS (2018). Ethnomathematics in Titi Laras and Irma in Javanese Gamelan. *Proceedings of the National Seminar on Etnomatnesia* .
- Prastowo, YG, Yunianto, HY, Tapoona, EGB, & Nugraha, AS (2022). Exploration of Ethnomathematics on Javanese Gamelan Musical Instruments (Kempul, Suwukan, and Gong). *Proceedings of the National Seminar on Mathematics and*



Mathematics Education .

Pratiwi, JW, & Pujiastuti, H. (2020). Exploration of ethnomathematics in traditional marble games. *Rafflesia Journal of Mathematics Education* , 5 (2), 1-12.

Ratna, Mr. Kutha. 2004. *Method Literary Research*. Yogyakarta: Library Students.

Ratna, Nyoman Kutha. 2018. *Encyclopedia; 2,000 Entry term, Biography, Works, Methods, and Theory Literature*. Yogyakarta: Library Students.

Sutrisno, Mudji et al. [tt]. *Cultural Studies: Challenges to Grand Theories of Culture*. Depok: Koekoesan

Sir, Mike. 2008. *Anthropology Culture*. Field: Faculty Language Literature And Art University The Land of Padang.

Sutarto, S., Ahyansyah, A., Mawaddah, S., & Hastuti, ID (2021). Ethnomathematics: Exploration of Mbojo Culture as a Source of Learning Mathematics. *JP2M (Journal of Mathematics Education and Learning)* .
<https://doi.org/10.29100/jp2m.v7i1.2097>