“Alms of the Sea” at Teleng Ria Beach Pacitan: Alternative Literacy Ethnoscience for Junior High School

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Abstract. The purpose of this research is to explore the potential of ethnoscience and the value of local wisdom contained in the tradition of “sea alms” in Teleng Ria Pacitan Beach, to profile as a science literacy in junior high school. The qualitative descriptive method used, where the researcher conducts the study on group culture under natural conditions through observation, interview, and documentation. The profile obtained in a booklet and socialized in students of Junior High School (SMPN 3 Tegalombo and SMPN 1 Pacitan). From this activity obtained information that the ability of students in interpreting ethnoscience in the tradition of “alms sea” in scientific science knowledge increases. It can conclude that the ethnoscience profile and the value of local wisdom can be used as an alternative science literacy in junior high school and has the potential to be used as a reference provider of data related traditions “Sea alms” and its integration with scientific knowledge.

Key word: Ethnosciences, Local Wisdom, Sea Alms, Science Literacy

1. Introduction

“Alms of the sea” is another term for the popular offering tradition in Teleng Ria Pacitan. Many other terms from different offerings traditionini each region. In Yogyakarta for example, it’s known as the “larung samodra,” in Prigi known by the “larung semboyo,” in Ngebel known as the “larung sesaji,” in Telaga Sarangan known as “labuhan.” In general the purpose of the tradition is same, that is to asking the Gods for fisherman to catch abundant catches in the coming year and be spared from the calamity [1].

In Pacitan, at first the sea alms was just a belief of the traditional fisherman community of Teleng Ria beach to keep peace and balance. Along with the development of sea alms civilization became a tradition of ritual ceremonies that are routinely performed every year. Even today it has become a tourism object to attract foreign tourists [2]. A series of sea charity events include prayer together, “larungan,” “ruwatana,” and a leather puppet shadow title all night. As one of the local cultural heritages, the tradition of alms needs to be preserved and the values of local wisdom and ethnosciences enclosed within them need to be explored.

Ethnoscience is knowledge derived from certain indigenous norms and beliefs that influence the interpretation and understanding of members of nature [3]. Ethnoscience is an activity of transforming the original science which consists of all knowledge of the facts of society derived from hereditary beliefs. The scope of mechanochemistry is infinite, even in the fields of science, agriculture, ecology, medicine and the benefits of flora and fauna [4].

Local wisdom is the view of life and science as well as various life strategies that manifest the activities undertaken by local communities in answering various problems in the fulfillment of their
needs [5,14]. Current conditions, many youth people don’t know about local wisdom in the area. Whereas local wisdom is a source of dynamic knowledge, developed and passed on by certain populations that are integrated with their understanding of nature and the surrounding culture [6].

Currently, science learning in schools still focuses on the subject matter in general and there is no activity to transform between the original science with scientific science. Though the original science knowledge is closely related to the life of society [7], which is reflected in culture [8]. Although science learning has been related with daily activities, but has not yet related with local wisdom (ethnoscience). Teachers used it limited as apperception, not until the discussion of the material on deeper local wisdom [9]. The implementation of character education in science education is still done administratively [10].

The result of observation about the understanding of the surrounding community and the junior high school children about the charity 57 respondents from 74 students have not known the tradition of charity of sea alms and the values contained in it. In general, society just knowing it as a culture, not understanding scientific science contained. Science learning based approach ethnoscience which related the culture of society [11], so that through the process of transforming the surrounding phenomenon with science knowledge will increase the understanding of the relationship between science in society and scientific science as new insights.

2. Methods

This research used qualitative descriptive methods. Data collection is done from primary and secondary sources. The data source in this research are: (1) primary data source from interview results with informant and questionnaire with students of junior high school (SMPN 1 Pacitan and SMPN 3 Tegalombo); (2) secondary sources from any documents include photos, videos, and articles about sea alms.

The techniques of collecting data include: (1) interviews with cultural’s Pacitan region, fisherman, elderly fisherman, chairman of the traditional fishermen community, (2) the literature review from books, journals, online sites, and etc; (3) looking for any documentation include photos, videos, and articles about sea alms; (4) observation, conducted by giving questionnaires to junior high school students, namely Junior High School (SMPN 3 Tegalombo and SMPN 1 Pacitan) to know the comparison of sea alms knowledge, and knowing the changes after studying ethnoscience.

Data analysis is done through: (1) data reduction to facilitate the researcher to collect further data; (2) presentation of data to present reduced data for further verification; (3) data verification for conclusion drawing.

Interpretation of the data in this study was conducted by confirming, linking, comparing and reviewing existing data [12]. The conclusion of the results of research conducted based on the results of data analysis has been verified.

3. Results and Discussion

Some literature explains that basically sea alms aims to beg for the salvation of the fishermen and their families and as gratitude for the presence of God over the abundance of blessings given [13].

The results of interviews and documentation obtained, indicates that sea alms symbolizes the fishermens’s gratitude for God, asking safety at sea, and as a medium of expectation for the next year to get abundant sea catch. Here’s (Table 1) the value of ethnoscience and local wisdom value on the sea alms.

| Value             | description                                                                 |
|-------------------|------------------------------------------------------------------------------|
| Character value   | Fishermen in Teleng Ria routinely organize a crush program from the catch to be included in |
cash. This program is done voluntarily self-awareness of each. It contains character values on how to manage sustenance and teaches the meaning of sincerity and sincerity.

The value of solidarity

The spirit of togetherness and kindship has always been the main thing in the implementation of the tradition of alms sea. With high solidarity the fishermen shoulder to shoulder and work together since the preparation stage until the implementation.

The value of gratitude

Alms of the sea is done as an expression of gratitude to God who has given salvation, protection, and tranquility to the fisherman during fishing in the middle of the sea. With the existence of offering larung is expected the fishermen always get salvation and get the catch of the abundant.

The value of compliance

Fishermen organize sea alms as rasai respect to the ancestors to continue the ritual that has been going on for generations.

Behavior of preserving nature

The materials used on this sea alms is the materials obtained from the environment that is environmentally friendly and easy to decompose, one of which is banana stem. It contains the lesson that if we nourish nature, it will take care of us for a long time.

Culture value

Implementation of sea alms is packaged in the form of a festive cultural carnival with the accompaniment of wayang kulit culture and other entertainment. The existence of a combination of cultural values with rituals indicates the side of cultural preservation that is maintained.

Religious value

The joint prayer on the stage songgo budhoyo in a series of sea alms events vertically contains the meaning of pleading for salvation and asking for sustenance to God. Various tools such as “tumpeng” also symbolize the majesty of God.

The soul of nationalism

Decorations in the form of red and white flags on boats used for melar symbolize the attitude of nationalism. It teaches that whatever culture is held, wherever it is locally, it remains all of Indonesia.

Symbolic value

Various tools and components of sea alms can not be separated from certain symbols and meanings. This shows the existence of the symbolic value contained therein. For example, the cone-shaped cone symbolizes God's majesty and the hope that the welfare of life is higher [14].
Aesthetic value

Beauty becomes a value that cannot be separated from the sea alms. For example, giving decoration in the form of young coconut leaves (janur) on the boat.

Table 2. Profiles of sea alms ethnoscience

| Culture value | Ethnoscience |
|---------------|--------------|
| “Tumpeng” at sea alms using a tool called “gethek,” which is a square-shaped board composed of banana stems. The selection of banana stem is none other because it is easy to reach and good floating ability. | Material of hydrostatic pressure

Banana stems can float well. Why is that?

- The structure of hollow banana stems, so the volume tends to be large, but the mass is lighter because the constituents are dominated by air.
- This is one of the reasons why banana trunks can float on the surface of the water. This case can be investigated by density’s theory.

(1) Density

Based the density’s equation:

\[ \rho = \frac{m}{V} \] ........................(i)

with:

\[ \rho = \text{density (kg/m}^3\text{)} \]
\[ m = \text{mass (kg)} \]
\[ V = \text{volume (m}^3\text{)} \]

Using the equation can be known why the banana stem can float, by looking at the ratio of mass and volume greater volume. This case has a causal relationship. The shape of a hollow banana stem, then the larger volume is bigger \( \rightarrow \) because the volume \( V \) bigger than mass \( m \), then the ratio of \( m \) and \( V \) or \( \frac{m}{V} \) less than 1. Meanwhile, the water mass density = 1. Hence, by the equation (i) it is known that its mass value is <\( \rho_{\text{air}} \).

(2) Hydrostatic pressure

Next look for hydrostatic pressure \( (\rho_H) \), hydrostatic pressure is the liquid pressure is calculated from the surface of the liquid to a point in water through equation (ii).

Equation:

\[ \rho_H = \rho gh \] ..........................(ii)

with:

\[ \rho = \text{hydrostatic pressure (Pa)} \]
\[ g = \text{acceleration of gravity (m/s}^2\text{)} \]
\[ h = \text{depth (m)} \]

The table above shows a picture of ethnoscience “gethek” profile made from banana stems. After being transformed into science knowledge, it turns out there is a great potential of science subject matter in junior high school. That is, science-based science learning by integrating science and students knowledge sciences can gain more understanding of what is encountered. Not only know the ins and outs of their culture but science knowledge also play a role and vice versa. Thus, in addition to learning and recognizing culture, students can take the important side of exploring the potential of science contained in the culture.

After the value of local wisdom and ethnosciences profiled, post test conducted to the respondent. The results show that students are able to understand ethnosciences and the value of local wisdom in
the tradition of sea alms than before given the material ethnoscience. The following sample of students answers in Junior High School (SMPN 1 Pacitan and SMPN 3 Tegalombo).

Figure 1. Post test results of science literacy at Junior High School in SMPN 3 Tegalombo

Figure 2. Post test results of science literacy at Junior High School in SMPN 1 Pacitan

Thus, it is evident that science literacy based ethnoscience is essential for the advancement of science knowledge. Through the process of transforming real science in real life, effective for spur the students to think critically. The demand to explore and understand the potential of science knowledge
in the culture will also increase student’s curiosity, in line with the government’s mission which be oriented curriculum 2013 to train students’ critical thinking minds.

4. Conclusion
Based on these results, can be concluded that the transformation of real science with science knowledge at sea alms tradition through the efforts of ethnosciences profile and the value of local wisdom effectively become an alternative science literacy. There is a potential for ethnosciences and the value of local wisdom in the tradition of sea alms. The various components in the sea alms that reflected by society can be studied scientifically. science literacy based ethnoscience is essential for the advancement of science knowledge. Through the process of transforming real science in real life, effective for motivate the students to think critically.

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