

Ethnosains-Based Learning Media in Implementing the Betangas Tradition as a form of Student Organizational Service in the Educational World

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Abstarct

Indonesia is a country rich in culture and local wisdom that is beautiful and interesting to study and preserve. One of the cultures that must be studied and preserved is the Betangas Malay custom in Muratara Regency, Palembang, South Sumatra Province. Betangas is a custom that is carried out by the bride and groom (bride and groom) before getting married. Betangas or what is known as a steam bath is usually done traditionally using local spices such as kaffir lime leaves, reed roots, fragrant pandan leaves, and fragrant lemon grass and covered in the form of pandan mats. However, these days the tradition is not being carried out because the local culture is starting to fade in the younger generation. This is because the younger generation does not know about the local wisdom they have because there is no science learning in schools that are related to local wisdom. Therefore, this research was conducted with the aim of knowing the philosophy and science concepts in the implementation of Betangas. This study uses a type of qualitative research. While the research method used is the ethnographic method. The results of the study found the concept of temperature, namely heat transfer in the Betangas implementation process. In addition to adding learning media in schools, Betangas local wisdom can also be applied through the dedication of student organizations. The resulting learning media is in the form of visual media, namely posters. Thus the younger generation can find out the local wisdom they have and more easily understand the concept of science.

Keywords: *Local Wisdom, Betangas, Ethnosains, Temperature and Heat, Learning Media*

Introduction

The Betangas tradition is one of the local wisdom of the people of Muratara, Palembang, South Sumatra Province which has been passed down from generation to generation. Betangas are usually done by the bride and groom before getting married. Betangas or steam baths are usually performed traditionally using local spices and covered with pandan mats. Types of spices commonly used for Betangas include lemon grass, fragrant pandan, patchouli, among-among, kaffir lime, *ceran cak* flower, cardamom, cinnamon, anise, and dressing (Putri et al., 2017). The spices are boiled using a pot to boil and produce steam. The boiled steam will be used for Betangas.

This tradition is usually carried out before the wedding day, the bride and groom are covered with a mat that is wrapped around the body only to the extent of the neck, and the top of the circled mat is covered with a cloth to keep the steam from the Betangas concoction from coming out and sticking to the body of the bride and groom (Sari & Susetyo, 2022). Betangas are believed by the community to have many health benefits. The benefits of Betangas include helping burn fat, detoxifying toxins in the body, and eliminating body odor. Betangas can also be done regularly once a month to maintain body fitness. Betangas local wisdom is very relevant when it comes to science learning. The scientific concept contained in Betangas can be observed from its physical, biological, and chemical aspects. However, currently, Betangas local wisdom has not been integrated into science learning in schools. Currently, many young people do not know the Betangas local wisdom. This is because the Betangas tradition has never been introduced formally at school. Even though the Betangas tradition has the potential to be used as a source of learning science.

One way that can be done to foster a sense of love for one's culture is by integrating local wisdom-based learning into science learning. Besides being able to foster a sense of love for culture, learning based on local wisdom can also develop student character. So that young people can know the local wisdom that is owned by their region, as well as be able to understand the concept of science in depth. Based on the problems that have been described, it is necessary to conduct a more in-depth study regarding the process of processing *lemang kancang beruk kerinci* in the Betangas tradition which can be integrated into science learning based on local wisdom. This research will also develop knowledge in science and add learning media in schools based on local wisdom.

Methods

This study uses a type of qualitative research. While the research method used is the ethnographic method. The ethnographic method is a qualitative research method used to reveal socio-cultural meanings by studying the interactions of socio-cultural groups within a more specific scope. Data collection techniques are in the form of literature studies of books and journals. The approach used in this study is a descriptive qualitative approach that aims to describe the actual conditions of the local cultural traditions of South Sumatra Province. Reconstruction of local culture is carried out by linking the concept of science to the Betangas tradition or steam bath. The data analysis technique carried out is by means of synthesis, the authors search for data based on research journals that are relevant to the formulation of the problem raised. Based on the observations made by the author on the process of implementing Betangas it can be integrated into science learning. The data that has been obtained is then described in a qualitative descriptive manner both in the form of written and image data, to be used as a medium for learning science in schools.

Findings dan Discussion

Local Wisdom

In the current era of globalization, cultural elements have begun to fade. Even so, there are still several groups of people who make traditional culture a culture that is wise with the surrounding environment. It is often connected with local wisdom, where local wisdom is a component of culture. This myth about local wisdom is often refuted by the development of the times, resulting in frequent cultural conflicts. Factors that cause intercultural conflict occur due to the presence of traditional and modern people (Brata, 2016). The existence of differences in local wisdom causes differences in the mindset of certain groups of people. This can be seen from simple components such as local community wisdom in managing water resources. In addition, local wisdom affects the social community and fulfills the needs of every human being. Through local wisdom, fulfillment of needs can be carried out from generation to generation as long as natural resources are maintained and balanced with the social relations of the community (Hidayati, 2017).

According to (Mungmachon, 2012) in maintaining local wisdom, teachers must include the importance of local wisdom in learning. Through this, students will understand how important it is to know local wisdom so that they can act accordingly. Local wisdom can be developed in several ways, such as: (1) Applying respect for others; and (2) Applying a balanced attitude. Through several things, every generation of the nation will think in general so that they not only enrich themselves but care more about the environment and other people. In addition to the assets of a nation that must be maintained, local wisdom is also a characteristic of an area that interprets culture from generation to generation to the next generation. To provide an understanding to the younger generation of their local wisdom, it is necessary to introduce it as early as possible. Besides that, a stimulus can also be carried out that makes the younger generation interested and feel they have local wisdom so that a sense of responsibility arises to continue to preserve it (Jufrida et al., 2019).

Local wisdom-based learning is very important to implement in schools. Through this learning, students are able to think well because they are supported by learning materials and directions from the teacher about local wisdom. In addition, the application of local wisdom-based learning can make local wisdom more developed so that it is able to provide universal views and maintain the culture and traditions that are applied (Ningrum et al., 2018).

Betangas

Betangas is one of the traditional Malay cultures in the form of a steam bath which has been passed down from generation to generation. In practice, Betangas uses traditional spices that have been formulated in such a way. Generally, the spices used come from as many as 10 types of medicinal plants, some in the form of spices for cooking ingredients and some plants taken from the forest (Putri et al., 2017).



Picture 1. Traditional Spices for Betangas
(Reference: weddingku.com)

Betangas or steam baths have been used for years, both by local people and foreign people. Steam bath is useful for refreshing the body, treating sleep disorders, improving blood circulation, and relaxing the muscles in the body. Usually, a steam bath is carried out in a closed room or covered using a mat where hot steam will be circulated at a temperature of around 43°C to 46°C. The length of time to do the steam bath procession is around 5-20 minutes, but it depends on each other's body resistance. -respectively. The heat energy that comes from the hot steam will be transferred to the user's body until it reaches thermal equilibrium. This energy will later affect the circulatory system, nervous system, and respiratory system (Polii et al., 2016).

For most people, steam baths also have benefits in terms of mental and mind. Most people say that after taking a steam bath, the body feels fresher, more relaxed, and smells better. In addition, steam baths are also beneficial in terms of health, for example, such as preventing vertigo, gout, colds, stomach aches, constipation, stomach aches, insomnia, flu, rheumatism, and diabetes (Batubara et al., 2017).



Picture 2. Betangas Process or Steam Bath
(Reference: medianusantaranews.com)

Steam bath is considered the most appropriate alternative to overcome excess serum in the body and improve the nervous system and muscles in the body. By taking a steam bath, the dead skin cells of the epidermis will be lifted out and the pores will open to release sweat along with the release of toxins in the body (Paninsari & Damanik, 2018). The most basic difference between traditional and modern Betangas or steam baths is found in the media used. Traditional Betangas use mats that are erected and rolled up so that hot steam does not come out. Whereas in modern Betangas, the media used is only in the form of a closed room where each wall is covered with *ambal* to prevent hot steam from escaping (Simarmata & Sembiring, 2015).

Ethnosains

According to (Sarini & Selamet, 2019) explain that etymologically ethnoscience comes from the word "ethnos" from Greek which means "nation" and "Scientia" from Latin which means "knowledge". Meanwhile, according to (Novitasari et al., 2017), ethnoscience is an activity of transforming genuine science which consists of all knowledge about the facts of society that comes from hereditary beliefs and still contains myths. According to (Yuliana, 2017), an important factor that needs to be considered in achieving meaningful learning is reconstructing original knowledge into scientific knowledge, or what is commonly called ethnoscience. Where ethnoscience itself is a science lesson associated with local culture and local wisdom in the area. According to (Syarifudin, 2017) the higher the recognition and understanding of ethnoscience in the community, the higher the creative thinking will be. Ethnoscience can be considered a medium for social reconstruction that can overcome the backwardness of society in a particular field of knowledge. The results of this change will certainly guarantee the opening of world horizons in the field of education.

Ethnoscience can also be called the process or activity of transforming indigenous knowledge into scientific knowledge. Indigenous knowledge of the community includes beliefs that have been passed down from generation to generation. Meanwhile, scientific knowledge is the knowledge that contains scientific facts that can be associated with certain indigenous knowledge and local culture. Ethnoscience is very suitable to be applied in learning at school, especially in science learning. If a teacher applies ethnoscience-based science learning, students tend to be more interested and enthusiastic in learning. This aims to introduce students that many facts in society can be related to scientific facts (Rahayu & Sudarmin, 2015).

Ethnoscience can not only be applied in science learning but can also be applied in physics learning. Cultural studies in physics is an important science to learn. This is due to the existence of a culture that can provide students with an understanding of the background knowledge of society and its relationship with physics concepts. Ethnoscience-based physics learning can encourage students to increase their appreciation of the culture of the community so that the culture of society is not lost in time and can be preserved (Asbanu & Babys, 2015). If ethnoscience can be applied in the world of learning, of course, learning will feel more memorable. Students can become more active, creative, critical, and analytical. In addition, students who apply ethnoscience-based learning will have more understanding and experience than students who study mediocre or conventionally. This is because students who apply ethnoscience-based learning have broader experience and a fairly high understanding, not only in the field of science but also in the field of the community environment (Iriani & Kurniasih, 2019).

Betangas philosophy

Betangas is a traditional custom in the form of a steam bath using spices, this tradition is usually carried out by Malay customs. One area that carries out this tradition is Muratara, Palembang, South Sumatra Province. These Betangas are usually performed on the bride and groom, which is done at least three times before the wedding day or reception. This tradition is not just a ritual but has benefits that can reduce body odor and can remove toxins (poisons) and kill germs in the body (Audina et al., 2021).

The process of implementing Betangas is carried out using the bride and groom sitting on a mat that has been rolled up with a decoction of fragrant spices so that in the process of implementing Betangas there is heat transfer from the Betangas spices or high temperatures to the body of the prospective bride or low temperatures which causes the bride and groom to feel sweat and feel fresher.

Integralization of Betangas Implementation on Heat Transfer Materials

Specific heat is a characteristic property of a substance that indicates the substance's ability to absorb heat. A substance that has a higher specific heat can absorb more heat. In the process of carrying out Betangas, spices are boiled or heated then the bride and groom enter the Betangas area which is covered by mats so that the bride and groom feel warm. Heat is the transfer of kinetic energy from an object with a higher temperature to an object with a lower temperature. When a substance is heated, the particles of the object vibrate and collide with neighboring particles at a lower temperature. According to (Sofianto & Irawati, 2020), the concept of heat transfer is a process of heat transfer that occurs due to several factors including the presence of waves and so on.

According to (Mahmuddin & Syahrir, 2016) heat transfer from one substance to another can occur in everyday life, either absorption or release of heat to achieve and maintain the required state in the process. The mechanism of heat transfer can occur in three ways, namely:

1. Conduction, conduction is the process of transferring heat from an area of high temperature to an area of lower temperature in a medium (solid, liquid, gas). In conductive heat flow, energy transfer occurs due to direct molecular interactions without any appreciable molecular displacement. In this Betangas process the flow of heat or heat will move and affect body temperature. This happens because the body is continuously in a hot room, so the body will sweat and body temperature will increase.
2. Convection, convection is a heat transfer process followed by the medium. In this Betangas process, the flow of heat or heat moves through the medium of water that has been boiled and undergoes evaporation.
3. Radiation, heat transfer by conduction and convection requires the presence of material as a medium to carry heat from a hotter area to a cooler area. However, heat transfer by radiation (radiation) occurs without any medium. In the Betangas process, there is a transfer of heat or heat by radiation because the Betangas actors feel hot in the presence of hot steam or heat radiation released from the spiced stew.

Student Organizational Media

The history of the Indonesian nation's journey to this day has never been separated from the contributions of students to the progress of the nation. If you remember the history of the student movement, starting from the awakening of Budi Utomo in 1908 with the enthusiasm to inflame the Indonesian nation to become a unified nation in the 1928 Youth Pledge, then students also participated in the process of forming the Unitary State of the Republic of Indonesia in 1945. This shows that the role of students is not only to sit in college and understand disciplines according to their respective fields, but need to be equipped with values from an early age that must be inherent in them as a future national leader so that he has the values of responsibility, discipline, honesty, unity, love of the motherland anywhere, both in the world of work (industry) and in society at large.

Students as learners have diverse potential. To develop it, continuous coaching is needed, such as developing an academic climate, providing information technology-based facilities, as well as providing facilities and infrastructure for developing talents and interests that students can access through activity units such as sports, arts, and other units that students are interested in. Student development is not only obtained in lecture halls but also obtained in organizations through student activities on campus which aim to increase intellectual values and integrity before students go directly into society. Student development is tailored to their talents and interests, where students are given the freedom to choose the right platform to use their free time so that organizational goals can be achieved.

The campus has a strategic role in developing human resources through the implementation of the tri dharma of higher education, namely the implementation of education and teaching, research, and community service. In addition to this role, vocational tertiary institutions have the responsibility to equip students with values according to the needs of the world of work and industry. To be able to work according to the needs of the world of work, in addition to mastering hard skills, also mastering soft skills, because in carrying out their profession apart from using technological tools they also carry out social interactions with fellow co-workers, superiors and partners in a professional manner. To train students in developing intrapersonal and interpersonal skills, apart from being obtained in lecture halls, also through student organization activities on campus.

Student organizations are one of the momenta for regeneration on campus in developing student potential. As stated in Law Number 12 of 2012 concerning Higher Education namely in Article 77 Paragraph 1 to Paragraph 3, that student organizations are a vehicle for developing talents, interests, and potential in students, including in the form of sensitivity, critical power, courage, pride, responsibility, and leadership. Every activity held in the organization will have an indirect impact on student attitudes such as how the process of meetings, discussions, and holding social services, to sharpening concern for the community or behavior towards themselves, and peers.

The process of forming a professional attitude is not only obtained in lecture halls but also through organizations, both at the institutional level and at the department or study program level. Every student needs to join an organization to develop themselves as a provider before entering the world of work (industry). Students as *civitas academica* are positioned as mature people who have an awareness of developing their potential in Higher Education to become intellectuals, scientists, practitioners, or professionals. Development of student's talents and interests through co-curricular and extra-curricular activities as part of the educational process can be carried out through student organizations. Based on documents (Kemdikbud, 2011), the implementation of values in student organizations is religious, honest, disciplined, hard work, creativity, independence, national spirit, love for the motherland, giving appreciation, and fostering friendship or communicativeness.

The role of student organizations also needs to be involved to achieve the application of learning media in educational environments that collaborate with local wisdom. The application of this media is applied as coaching activities and student services covering the fields of reasoning, interests and talents, organization, and welfare. In an integrated manner, these coaching activities and services will be carried out under the guidance of lecturers in coordination with the leadership assisted by administrative staff in the student affairs sector. Student organizations are vehicles and mean for students' self-development towards broadening their horizons, increasing their scholarship, as well as personal and religious integrity in addressing campus, community, and national issues. Thus, the role is very large in designing, implementing, and coordinating activities so that they can provide optimal benefits for all students and also the community.

In addition, the application of this media will be specifically for student organizations engaged in research where the distribution of programs or research results will be disseminated to schools. It is the obligation of student organizations as a forum for students to channel their creative ideas and distribute them to the community because the nation hopes it is better to start these things in simple ways such as focusing on the needs of students as well as providing convenience in the world of education.

Posters Media

Media is something that can be used to stimulate the thoughts, feelings, concerns, and interests of students in such a way that the learning process occurs. One of the media that can be used to improve students' cognitive abilities is visualization media such as poster media. According to (Maiyena, 2013), posters are also called placards, paintings, or pictures that are installed as a medium to convey information, suggestions, messages and impressions, ideas, and so on. Posters have advantages, namely the price is affordable by a teacher or teaching staff. Media posters can visualize messages, information, or concepts to be conveyed to students. Posters present illustrations through images that almost match the reality of an object or situation. Such as the delivery of material used in the introduction of ethnoscience-based learning in collaboration with local wisdom.



Picture 3. Posters as Betangas Learning Media

In addition, poster media indirectly provides many benefits in the world of education as. Daryanto states the benefits of poster media in character education (Wijayanti, et al., 2016) are as follows:

1. Motivating the use of posters as a driving force or motivation in student character education. Poster media can show students so that children are able to stimulate and learn more or want to know more information regarding the nature of the message conveyed through the poster. By doing this, there is a process of encouraging character education learning.
2. Making the message aware through the right posters will help awaken students so that it is hoped that their behavior will change in daily practice so that over time it will become a habit. Awakening activities are very important because of the ability of the human memory to get used to it.
3. Providing creative experiences as learning media, posters provide the possibility for creative learning and participation. This gives students the opportunity to describe what they have learned. In other words, posters provide new experiences so as to foster students' creativity in learning.

Conclusion

The Betangas tradition is a tradition of taking a steam bath using fragrant spices which is usually done by the bride and groom, both men and women and is done at least three times before holding a wedding or reception with the aim of eliminating body odor and eliminating toxins in the body. In the Betangas tradition, the heat transfer method used is conduction, in which heat from the spice vapors will move to the body and will affect body temperature. The role of student organizations also needs to be involved in order to achieve the application of learning media in educational environments that collaborate with local wisdom. Posters as learning media in the world of education have a very important role during the learning process. In order for the poster to support effective learning, the teacher needs to know about the criteria for the learning poster.

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