

Ecological Intelligence in Local Wisdom of The Tengger Tribe as Learning Sources of Social Studies

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Abstract: The Tengger tribe has local wisdom as a form of ecological intelligence in minimizing natural damage. Local wisdom is important to be bequeathed to the next generation, but the current globalization hampers the process of inheriting these values. Education, in this case, Social Studies subjects, is heavily responsible for internalizing these noble values. This article was written based on the results of a qualitative descriptive study that explored the potential of the local wisdom of the Tengger people related to ecological intelligence. Based on the research results, the people of the Tengger Tribe have wisdom in managing land, forests/trees, and water. Local wisdom, a form of ecological intelligence, can be adopted as a Social Studies learning resource in junior high schools in the Merdeka Curriculum. The research results are expected to be used as a reference in developing Social Studies learning based on local culture.

Keywords: Ecological intelligence, local wisdom, Tengger tribe, social studies.

INTRODUCTION

The Tengger tribe is a group of people who inhabit the slopes of Mount Bromo and Semeru, which are included in the Taman Nasional Bromo Tengger Semeru (TNBTS) area. TNBTS is currently one of the most visited tourist attractions in East Java. The impact of tourism development can directly or indirectly affect the social, cultural, economic, and natural environmental aspects of the community around tourist attractions (Oktavia, 2021; Hamzah, 2018; Yusuf, 2020).

The problems and challenges to the Tengger natural environment are thus very complex. Intelligence that relies on intellectual abilities alone is insufficient to overcome these complex life challenges. One of the necessary intellegences is ecological intelligence. Ecological intelligence is needed to understand the impact of human actions on the environment (Supriatna, 2017).

Local people own ecological intelligence as an effort to protect the environment. An example of this can be

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seen from the ecological intelligence of the Tanggui artisans on the banks of the Barito River (Mutiani, 2021), the ecological intelligence in the Panunggu Rite on Rhun Maluku Island (Farid, 2019), and the ecological intelligence in the Ngaruwat Overtime Tradition in the people of Mandalamekar Village, Cimenyan District, Bandung Regency (Gymnastiar, 2022). This form of community ecological intelligence can become the basis for decision-making in dealing with problems related to preserving the natural environment.

Environmental damage is increasingly widespread with globalization (Yunanto, 2020; Ali, 2020). Globalization also impacts decreasing the existence of local wisdom owned by the community (Konradus, 2018). Thus, the ecological intelligence of the community's local wisdom becomes important to be internalized in the community, especially in the younger generation in the current era of globalization. One of the most effective ways of internalization is through the world of formal education, namely school.

Social Studies subjects in junior high schools are responsible for internalizing ecological intelligence from local wisdom through the learning process at school. This is related to the main goal of Social Studies learning, which is to instill awareness of

individual positions in their capacity as individuals and community members (Hutama, 2016). To achieve this, learning materials should be developed based on the various potentials available in their lives, especially in implementing the Merdeka Curriculum, where the school and teachers can manage learning according to students' capacity and the conditions of the surrounding environment.

Based on this explanation, the Tengger tribe has many traditions and cultures that abound in noble values and wisdom as a form of ecological intelligence. Therefore, this paper will explore the form of ecological intelligence in the local wisdom of the Tengger Tribe, which will then be linked to Social Studies subjects in junior high schools in the Merdeka Curriculum as an alternative source of learning.

METHOD

This article results from a qualitative descriptive study conducted in Ngadas Village, Poncokusumo District, Malang Regency. The people of Ngadas Village are the Tengger Tribe, which until now is still steeped in local customs and culture. The research was conducted using document study, interview, and observation methods. Document studies

are conducted to explore the nature of ecological intelligence and local wisdom. Interviews were conducted with a village head, 3 Tengger traditional leaders, and 5 members of the Tengger community to explore forms of ecological intelligence in the local wisdom of the Tengger Tribe. Observations were also made to validate the validity of the data obtained from interviews and document studies. The results of the field research were then analyzed and linked to the Merdeka Curriculum and Social Studies subjects in junior high schools

Discussion

Ecological Intelligence

Ecological intelligence is the human ability to adapt to the ecological environment where humans are (Goleman, 2010). Ecological intelligence is an ability or competency people possess in responding to circumstances that occur around their environment and applying them in everyday life. Meanwhile, Gardner (2013) refers to ecological intelligence as naturalist intelligence. According to him, naturalist intelligence is the human ability to understand natural phenomena, show ecological awareness, and show sensitivity to natural forms. Furthermore, Orr (in Setiawati, 2016) suggests that someone

with ecological intelligence is “ *The ecologically literate person who has the knowledge necessary to comprehend interrelatedness and attitude of care or stewardship. Such a person would also have the practical competence required to act on the basis of knowledge and feeling*’.

The sustainability of human life in the future will depend on ecological intelligence. The ecological intelligence that the community already has is important to be internalized into the younger generation through education. Palmer & Neal (1998, pp. 21-27) explained that ecological intelligence in education could be achieved by developing sensitivity, awareness, understanding, critical thinking, problems solving related to environmental problems, and forming environmental ethics. To support this, *the Center for Ecoliteracy* has developed a set of "core competencies" to help young people develop and live in sustainable societies. This competency relates to knowledge (*learning to know*), attitude (*learning to be*), action (*learning to do*), and relationships with humans and the natural environment (*learning to live together*).

Local Wisdom

Each region in Indonesia has its uniqueness and contains local wisdom.

Local wisdom comes from two words: wisdom and local. In general, the local wisdom can be understood as local ideas that are wise, full of wisdom, and of good value, which are embedded and followed by members of the community (Qodariah, 2013; Guests, 2016; Umami, 2017; Anwar, 2017). Other terms for local wisdom include local knowledge and local intelligence (local genius) (Shufa, 2018). Based on this understanding, it can be interpreted that local wisdom is everything that is the potential of an area as well as the results of human thought and the results of human work, containing wise and prudent values that are internalized, followed, and passed down from one to another generation by a group of people. Local wisdom is a characteristic that distinguishes one region from another.

Local wisdom manifests in knowledge, customs, rules/norms, culture, language, beliefs, folk songs, legends, myths, folklore, and daily habits (Tinja,

2016; Utari, 2016). In more detail, Anwar (2017) explains that the scope of local wisdom can also be divided into several scopes, including local norms; community rituals and traditions and the meaning behind them; folk songs, legends, myths, and folklore, which usually contain certain lessons or messages that are only

recognized by the local community; data and knowledge information collected from community elders, traditional elders, spiritual leaders; manuscripts or sacred books that are believed to be true by the public; ways of local communities in fulfilling their daily lives; tools and materials used for certain needs; and the condition of natural resources that are commonly used in people's daily livelihoods. Local wisdom is built from social values that are upheld in the community's social structure and has a function as an identity, guide, controller, and sign for behavior in various dimensions of life, both when dealing with others and with nature (Utari, 2016).

Local wisdom contains noble values that can be used in building the character of the Indonesian nation. On the other hand, globalization is increasingly eroding the local culture of a society (Tinja, 2017). Thus, the nation's noble cultural heritage must be preserved, in which one of the ways is through education.

Ecological Intelligence in the Local Wisdom of the Tengger Tribe

Mount Bromo has an important meaning for the sustainability of the Tengger Tribe's people. The people of the Tengger Tribe believe that when they live well and adjoin with nature, nature will

benefit them (Nurchayono, 2018). The local wisdom possessed by the Tengger people as an effort to harmonize with the surrounding natural environment is as follows:

a. The local wisdom of the Tengger Tribe toward land

The Tengger people's respect for the land is manifested in the behavior of environmental wisdom to protect the land in the form of customary law. Through deliberations, all villagers have thoroughly established a prohibition against abandoning or releasing land to outsiders of Tengger. In addition, the Tengger Tribe community also classifies land uses, including settlements, plantations, and forests. The entire community must obey and subject to land use according to the predetermined classifications.

b. The local wisdom of the Tengger Tribe toward forests (trees)

The attitude of the people in maintaining harmonization with nature is also reflected in the existence of customary sanctions among the Tengger tribe community for residents who are caught cutting down trees. Customary sanctions can be restitutive in nature, in which residents are asked to reforest at the logging location, and customary

repressive sanctions by parading the violators around the village. Parading the violators is intended to humiliate them socially, so they no longer repeat their actions.

Residents who violate the regulations of cutting down trees outside the customary forest area will only be given restitution customary sanctions. Violators are given customary sanctions to reforest at the logging site. Meanwhile, residents who are caught cutting down a tree in a customary forest area will be subject to customary sanctions to reforest at the location where the tree was cut (restitutive) and parading them around the village (repressive) by coercing them to wear the branches of the tree they cut down around their necks.

c. The local wisdom of the Tengger Tribe toward water

As with forests, the Tengger people must also respect water sources. This respect manifestation for water sources is then reflected in social and religious norms, leading to forming a legal culture to protect water sources. These norms are then manifested in the behavior of environmental wisdom in the form of (1) not destroying/cutting down the plants around the springs, not taking

the sand and not taking the grass; (2) not commodifying water with compensation costs because the water belongs to Mother Earth.

Local Wisdom in Social Studies Subjects in the Merdeka Curriculum

Local wisdom in the learning process at school is important as an effort to increase love for culture in the surrounding environment amid globalization. In addition, applying local wisdom in learning is useful for increasing student knowledge, instilling character, and equipping students to deal with all problems outside school. Thus, education is expected to achieve meaningful learning through the principle of *thinking globally, act locally* (Utari, 2016).

Learning resources based on local wisdom are very important and much needed in education. Based on the development model proposed by Dick and Carey (in Tanjung, 2015), it is explained that learning resources must contain the information students need. Thus local wisdom-based education can provide students with knowledge, skills, and behavior to have solid insight about their environmental conditions and community needs following the values/rules that apply in their area.

Regarding local wisdom in Social Studies learning, it is recognized that the Social Studies subjects are humans, space (natural environment), and time, in which, if the three of them are combined, have dynamic properties, even though they are static from a physical perspective (Qodariah, 2013). Because of its dynamism, Social Studies learning has very dense and complex material. Learning resources in Social Studies are thus not only in the form of books but also the behavior of the surrounding community, one of which is local wisdom.

Local wisdom can be used as a learning resource for Social Studies subjects, especially in the Merdeka Curriculum. Based on the Decree of the Head of the Standards, Curriculum and Education Assessment Agency of the Ministry of Education, Culture, Research, and Technology (Keputusan Kepala Badan Standar, Kurikulum, dan Asesmen Pendidikan Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi) Number 008/H/KR/2022, Social Studies is a subject that is a means of increasing knowledge and skills related to people's lives and their environment. Thus, learning based on the local wisdom of the community, especially related to environmental awareness

(ecological intelligence), is strongly required in Social Studies learning.

The Merdeka curriculum is designed to provide flexibility to schools and teachers in carrying out the learning process. This freedom is given so that schools and teachers can explore students' potential and various learning resources in the surrounding environment (Anggara, 2023; Priantini, 2022). Based on this explanation, implementing local wisdom values as a learning resource is given the widest possible space in the Merdeka Curriculum.

Based on a study of the Merdeka Curriculum, students in class VII-IX of the SMP/MTs/Package B Program entered Phase D. According to this phase, the Social Sciences subject has several learning outcomes. The Learning Outcomes are divided into two elements: understanding the concept and process skills (Decree of the Head of the Ministry of Education and Culture's Education Standards, Curriculum, and Assessment Agency, 2022). In the concept of the understanding element, the local wisdom of the Tengger people can be used as a Social Study learning resource to support the following learning outcomes:

The learning outcomes of geography education are essential for students to understand their existence and the environment around them. There are four primary

learning outcomes that students need to achieve in geography education, including understanding the geographical conditions of the area and the characteristics of the community, analyzing the relationship between the diversity of geographical conditions of the archipelago and cultural pluralism, comprehending how people work together to meet their needs, and analyzing the potential of natural resources and their relation to disaster mitigation. The local wisdom of the Tengger people can also be used as a learning resource to support the learning outcomes of process skills elements. Students need to learn process skills elements, such as observing, asking questions, predicting, collecting information, planning and developing investigations, organizing information, representing results, communicating findings, and evaluating learning experiences. By achieving these learning outcomes, students can have a better understanding of geography and apply it to their daily lives while also fostering cross-subject collaborations. It is crucial to use innovative and appropriate strategies in learning activities, such as selecting models, methods, modules, and assessment instruments, to minimize differences in learning outcomes between students. The learning outcomes for students encompass a va-

riety of skills and knowledge. Firstly, students are expected to understand their own existence and interact with their surrounding environment. Secondly, they are encouraged to analyze the relationship between geographical conditions, community characteristics, and natural resources to understand disaster mitigation potential. Thirdly, they should comprehend how geographical diversity contributes to cultural pluralism. Additionally, students should understand how people work together to meet their needs. The Tengger people's local wisdom can provide a valuable learning resource to support these learning outcomes, especially for developing process skills. Process skills involve observing and asking questions, predicting outcomes, collecting information, planning and developing investigations, organizing information, drawing conclusions, and communicating findings. Finally, students should evaluate their learning experiences and plan cross-subject collaborative follow-up projects. By fulfilling these learning outcomes, students can develop the skills and knowledge necessary to become active and responsible members of their communities.

Based on the details of the learning outcomes of the process skills elements above, the local wisdom of the Tengger

Tribe can be used as an object to be observed, observed, and researched by students. Furthermore, the results of this process can be communicated by students both digitally and non-digitally.

The accommodation of local wisdom values in the Social Studies learning context can be done by incorporating aspects of local wisdom, starting from designing learning programs, implementing learning, and assessing student learning outcomes. The transformation of local wisdom values in Social Studies learning does not mean indoctrinating the values contained in it but studying them logically, critically, and analytically so that students are able to solve the real problems they face.

Social Studies learning based on local wisdom is presented by using a scientific approach (*scientific*) and models of *discovery-inquiry-based learning*, *problem-based learning*, or *project-based learning*. The teacher can choose the application of the learning model according to the learning material. Nonetheless, in the context of completing learning outcomes, teachers are strongly encouraged to use approaches and other creative models following the situations and conditions of students and school culture. The Merdeka Curriculum also gives authority to Social Studies teachers to develop the material into themes

that suit the needs of students and are in accordance with the circumstances and conditions of the school environment. The themes containing local wisdom related to ecological intelligence can be implemented in classroom learning more realistically by developing learning resources and media (Supriatna, 2017). Learning can be done in the classroom using a variety of aids such as films, photographs, audio recordings, and printed materials containing material on local wisdom. Learning can also be done outside the classroom through field visits. Through this learning design, students will gain knowledge, awareness, as well as skills to implement their ecological intelligence in everyday life.

CONCLUSION

The Tengger tribe has ecological intelligence in local wisdom in managing land, forests, and water. These local

wisdom values are important to be internalized into the younger generation amid the current era of globalization. Social studies subjects at the junior high school level have a big role in internalizing the Tengger Tribe's ecological intelligence in the world of education. These noble values of local wisdom align with the learning outcomes of the Social Studies subject in the Merdeka Curriculum, both in terms of elements of understanding concepts and elements of process skills. Thus, the values of the local wisdom of the Tengger Tribe can be used as a source of learning in Social Studies in junior high schools that apply the Merdeka Curriculum. Furthermore, the research results are expected to be used as a reference by schools and teachers in developing Social Studies learning based on local culture.

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