

## Local Wisdom of Batik Kudus: Integration of Ethnoscience Learning in Islamic Elementary Schools

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### Abstract

Students' lack of understanding of local wisdom is a significant problem in elementary schools. Especially in Kudus, batik art which contains cultural and scientific values has not been utilized optimally in learning at school. This research aims to describe integrated ethnoscience learning with the local wisdom of Batik Kudus for elementary school students. This type of research is field research. Meanwhile, this research approach is a qualitative approach with descriptive methods. The location of this research is MI NU Miftahul Ulum Kudus. Data collection techniques are interviews, observation and documentation. The data analysis techniques used are data display, data reduction, and conclusion drawing. The results of this research are that the use of local wisdom of Batik Kudus in ethnoscience learning can be a learning approach that can activate students. Integration of Local Wisdom of Batik Kudus in Ethnoscience Learning for Grade B Elementary School Phase B students in learning using ecoprint activities. This activity provides students with skills in studying local culture, especially related to batik Kudus, which will be integrated into learning. The integration of local wisdom of Batik Kudus in learning is able to develop critical and creative thinking skills and foster a sense of love and pride in local culture.

**Keywords:** Local Wisdom, Batik Kudus, Ethnoscience Learning, Islamic Elementary School Students

### Introduction

The education curriculum in Indonesia continues to develop with efforts to create a generation with broad knowledge and strong character. The latest curriculum emphasizes the importance of holistic learning, which includes not only academic knowledge but also character development and life skills. Independent Curriculum Learning is one of the Indonesian government's initiatives to develop education that is

more relevant and oriented towards developing students' potential. The Independent Curriculum aims to give schools the freedom to design their own curriculum according to the needs and characteristics of their students. The independent curriculum, with one of its objectives of forming a prison profile in accordance with Pancasila, provides options that can be used as a benchmark in its implementation, one of which is the theme of local wisdom (Santika, 2022).

Through Independent Curriculum, schools can recognize and appreciate cultural values and local wisdom in the region. So that it can help preserve and promote local cultural heritage and traditions. Learning local wisdom can encourage students to be more creative and innovative in responding to local problems and developing relevant solutions. The independent curriculum can give birth to Pancasila students amid the degradation of the noble values of education by implementing local cultural wisdom (S. D. Handayani et al., 2022). In line with efforts to create students with Pancasila character through the application of local cultural wisdom in an independent curriculum, ethnosience comes as an effective strategy to integrate culture into the learning process, creating a contextual and relevant learning environment.

Learning with an ethnosience approach is important for exploring and empowering indigenous community knowledge that has been embedded in students to be studied towards formal science through learning at school (A. A. A. T. Handayani et al., 2022). Integrated ethnosience learning can be implemented in school learning. The goal is for students to continue to preserve their own local cultural wisdom (Annisha, 2024). Culture-based learning at the elementary school level is an alternative, learning approach that prioritizes the activities of students with various cultural backgrounds, especially with the local wisdom of batik Kudus. Based on the facts in the field, it is necessary to strengthen learning in the field of science in elementary schools. science learning is developed based on

the uniqueness and excellence of the region (Safitri et al., 2023). One of the efforts that can be made is to integrate the local wisdom of batik Kudus in ethnosience learning for elementary school students.

Batik is an important cultural heritage as a form of art and culture that contains local values and knowledge. Batik is also an intangible cultural heritage (Carlo, 2019). Batik Kudus is one of the batik motifs in Indonesia that is included in a row of other well-known motifs. Batik Kudus is also one of the coastal batik groups, such as Pekalongan batik, Jepara batik, and Lasem batik. So, this batik also has bright colors with unique motifs that are so distinctive and easily recognizable. The motifs have a calligraphy feel because they are influenced by the history of the Walisongo in Kudus, namely Sunan Kudus (Sheikh Dja'far Shodiq) and Sunan Muria (Raden Umar Said), the patterns have an Islamic feel (Sulistiyorini & Utami, 2018).

However, batik Kudus motifs also contain the local wisdom of the Kudus people, this can be seen from the appearance of motifs such as Kapal Kandas, Parijotho, Gebyok, and isen-isen beras kecer. The motif of batik Kudus, for example, is Parijotho which is very well known by the Kudus community. Other motifs are Menara Kudus, Pakis Haji, Bulusan, Kapal Kandas, and so on. To maintain the local wisdom of batik for students, namely by teaching the history and meaning of Batik Menara Kudus, start by understanding the history and meaning of batik Kudus motifs, can appreciate the cultural heritage contained in every batik work. *Local wisdom* has

significant relevance in the context of ethnoscience learning. Ethnoscience is a field of study that examines the relationship between culture, traditional knowledge and modern science, especially in the context of natural science.

Research on the integration of local wisdom in elementary school learning, especially in the context of learning science and social sciences (IPAS), highlights the importance of incorporating local culture as part of the educational process to shape students' character and preserve cultural heritage. In this case, Batik Kudus as part of local wisdom has great potential to be integrated into science learning through an ethnoscience approach. Several studies have discussed the importance of introducing local culture in education, such as in the independent curriculum, which provides space for schools to design curricula according to local characteristics and needs. Some previous research related to (Faiza et al., 2023) that the batik Kudus, namely the research The motifs of Batik Kudus produced have meanings or uses, for example motifs that express Islamic culture or Islamic calligraphy motifs. Kudus local cultural concept regarding icons and traditions as learning media at elementary school level (Salma et al., 2022).

However, there is a research gap in the optimal use of local wisdom, especially Batik Kudus, in IPAS learning in elementary schools. Although there have been initial efforts to integrate Batik Kudus into learning, there are still few studies that specifically develop ethnoscience-based learning models that

combine Batik Kudus motifs and philosophies with science concepts taught in elementary schools. In addition, how this learning can help students understand not only science but also the cultural values contained in Batik Kudus has not been widely explored.

This research, attempts to fill this gap by developing an ethnoscience learning approach based on the local wisdom of Batik Kudus, which is expected to enrich the learning process and strengthen students' understanding of natural sciences while respecting local culture.

## Methods

This type of research is *field research (field Research)*. The approach used in this research is a qualitative approach with descriptive methods. Researchers took the location for this research at Batik Muria Kudus and MI NU Miftahul Ulum Kudus. With the reason that Batik Muria is a typical Batik Kudus house that combines tradition and beauty in every batik cloth. Meanwhile, MI NU Miftahul Ulum is one of the driving schools in Kudus Regency.

Data collection techniques in this study are interviews, observation and documentation. While the data analysis technique is inductive, meaning that the analysis is based on the data obtained, followed by the development of relationship patterns or hypotheses. (Sugiyono, 2017). This research data analysis technique quotes from Miles and Huberman including *Data Reduction*, *Data Display*, and *Conclusion Drawing and Verification*.

## Results and Discussion

### 1. Local Wisdom of Batik Kudus in Ethnoscience Learning

Batik is a work of human hands that uses canting directly as a drawing tool with wax to create beautiful works (Faiza et al., 2023). Batik Kudus is a typical Batik Kudus with motifs rich in local cultural wisdom (Prima & Dartono, 2021). The use of local wisdom of Batik Kudus in ethnoscience learning can be a learning approach that can activate students. In the context of Batik Kudus, the utilization of existing traditional knowledge in batik making to understand more about the science and technology involved.

The distinctive feature of Batik Kudus from other batik according to Yuli, a batik activist, is the cultural acculturation between Chinese culture, indigenous culture, and Islamic elements. This is easy to understand, because Kudus City is the origin of two Wali Songo who spread Islam in Java, namely Sunan Kudus and Sunan Muria. Thus, there are these elements in batik Kudus motifs. Islamic accents in batik Kudus are present in motifs such as the Holy Tower, Islamic calligraphy, and so on. There is also Kretek City Batik. that deserves to be considered as a highly philosophical cultural heritage. A tradition that is increasingly recognized worldwide.

The making of Batik Kudus also reflects the cultural values embraced by the people of Kudus, such as the values of hard work, handicraft, and cooperation within the community. These are important aspects of local wisdom. Holy Batik produced using local wisdom is often used in various ceremonies and cultural events, such as weddings, religious events, and local festivals. This shows how important batik is in the culture and identity of the Kudus community.

Local wisdom is closely linked to ethnoscience learning as it helps students relate natural science to the local cultural and environmental context. It can enhance students' understanding of how humans interact with nature and their culture and how science can contribute to solving problems related to the environment and local communities.

Ethnoscience learning can help students develop respect for local cultures and cultural diversity. It can promote tolerance and cross-cultural understanding, which are very important skills in an increasingly connected global context (Kholidah et al., 2022). The integration of local wisdom into science learning has gained increasing attention in recent years, as it provides a valuable opportunity to bridge traditional knowledge and modern scientific understanding (Musa et al., 2018; Ramdiah et al., 2020; Suryanti et al., 2020). Kudus, a city in Central Java, Indonesia, is renowned for its vibrant batik tradition, which not only holds cultural significance but also encompasses a rich repository of local knowledge and practices.

Batik, a traditional Indonesian technique of fabric dyeing, is more than just an art form; it is a reflection of the deep connection between a community and its natural environment. The intricate design motifs, color schemes, and production processes of Batik Kudus are intimately linked to the region's diverse flora and fauna, as well as its rich cultural heritage, serving as a tangible representation of the local wisdom (Ardan, 2016).

Integrating the local wisdom of Batik Kudus into ethnoscience learning can offer a multifaceted approach to engaging students in meaningful,

contextual education. Ethnoscience, which explores the scientific knowledge embedded within traditional cultural practices, provides a platform to explore the intersection of local wisdom and Western scientific knowledge.

By incorporating Batik Kudus into ethnoscience learning, students can gain a deeper understanding of the scientific principles underlying the traditional dyeing techniques, the role of natural materials in the production process.

## 2. Integration of Batik Kudus Local Wisdom in Ethnoscience Learning for Elementary School Students

Ethnoscience in learning to elementary school students is intended to collaborate between the culture of batik kudas with IPAS learning. The local

wisdom conveyed for learning activities to grade IV students of MI NU Miftahul Ulum is related to Batik Kudus in a simple way.

Teachers can determine the material by selecting local cultures that will be integrated in local culture-based science learning (Widyaningrum, 2018). The integration of Batik Kudus local wisdom in ethnoscience learning is found in Phase B of class IV elementary school. In Phase B, learners identify the connection between newly acquired knowledge and find out how the concepts of Natural and Social Sciences are related to each other in the surrounding environment in everyday life.

The following are the elements and learning outcomes of IPAS subjects in grade IV elementary school.

Table 1. Learning Elements and Outcomes

| Elements                                | Learning Outcomes                                                                                                                                                               |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IPAS (science and social) understanding | Learners recognize the diversity of culture, local wisdom, history (both figures and periodization) in the province where they live and relate it to the context of life today. |

Based on Table 1, the learning achievements in the element of understanding IPAS (science and social) include learners recognizing cultural diversity, local wisdom, and history. In this case, the teacher provides material about the local wisdom of Batik Kudus. The learning objectives include learners can recognize and understand the cultural diversity in the province where they live, learners can explain the values, traditions, and norms that are part of local culture, learners can connect knowledge about culture, local wisdom, and history of the province where they live with the context

of current life, and learners can apply local values and wisdom in daily life and contribute positively in maintaining and preserving the culture and history of the province where they live.

The integration of batik Kudus culture with IPAS learning is through ecoprint activities, painting with splash and weaving techniques. Eko print, namely from plants the leaves are hit using a hammer, so that the color of the leaves sticks to the wood. So that students can easily carry out these learning activities easily. Integrating local wisdom into the learning process enables students

to understand and appreciate local cultural values and traditions in a more contextual and relevant way (Annisha, 2024).

The goal of this program is to provide understanding related to ethnoscience and provide skills for students in learning local culture, especially related batik Kudus which will be integrated in learning. In addition to instilling environmental cultural values, it can also foster student character (Sulistiawati et al., 2023). When teachers are able to present local wisdom such as Batik Kudus in explaining science material, it will be easier for students to understand the material, besides that it can make students more sensitive to things in the surrounding environment (Aufa, 2021). Learning based on local wisdom has a big influence and can improve student learning outcomes (Miftakhussa'adah & Ahsani, 2023).

### Conclusion

Local wisdom has a close relationship with ethnoscience learning because it helps students relate natural science to the local cultural and environmental context. The integration of the local wisdom of batik Kudus in ethnoscience learning is found in Phase B of class IV of elementary school. The integration of the culture of batik Kudus with IPAS learning is through ecoprinting activities, painting artwork with splashing and weaving techniques. This activity provides skills for students in learning local culture, especially related to batik Kudus which will be integrated in learning.

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