

Empowering green technology through local wisdom in paser folktales

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Abstract

Local wisdom has evolved and been faithfully practiced within the unique fabric of a specific community. It inherently embraces sustainable and eco-conscious approaches across various facets of life. This research delves into the empowering influence of Paser's indigenous wisdom on the realm of green technology. Employing a descriptive qualitative methodology particularly a study of literary works, this study leverages the rich tapestry of Paser's folktales as its primary data source. The findings underscore the presence of substantial local wisdom embedded in Paser's folk narratives, fervently advocating the principles of green technology. Paser's folktales convey the potential for local wisdom to play a pivotal role in driving green technology advancement, encompassing diverse domains such as agriculture, resource management and utilization, architectural practices, trade systems, cost-effective solutions, and more. This study sheds light on the interplay between traditional knowledge and modern innovation, presenting an intriguing pathway towards sustainable development and eco-conscious living.

Keywords

Green technology, Local wisdom, Paser folktales

Introduction

In recent years, the environment has been confronted with increasingly pressing problems. The escalating challenges affect all aspects, putting humans to the test to invent solutions that cause no further damage to the earth. Fostering a sustainable and eco-friendly choice is no longer an option; it is an insistent demand. Green technology appears as the effort to this existing demand.

Green technology serves as an endeavor to minimize humans' negative impact on the planet, and it contributes to a more sustainable development effort. It sets the foundation for 'greener' or more eco-centric advancements that are currently evident in all aspects of human life today. In today's academic scene, this has become an ongoing commitment. represents humanity's approach to saving the Earth and serves as an effort to prevent further ecological landslide (Soni, 2015, p. 1). In practice, green

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technology fundamentally emphasizes reducing its adverse impact on climate change. Various fields should strive to prioritize significantly less waste (low and zero waste) and renewable resources. Advancements should encompass systems of procedures, knowledge, goods and services, as well as organizational and managerial practices that are acceptable to the environment (Kim, 2011, p. 15). As more become aware of the need to save the environment, the reach of green technology is expanding. Not only that green technology focuses on the prioritization of renewable resources and the minimization of the ecological impact; it also highlights on the optimization of the resource utilization and the consideration of the social implications of the environmental preservation and technological developments. Therefore, green technology is at least expected to be beneficial to the environment, the economy, and the society.

As one of the active efforts to promote a more sustainable living, green technology has become increasingly paramount, especially in facing the threats of environmental degradation. The real challenge in developing ways of sustainable living and a “greener” approach to life is making sure to maintain the complex balance between prioritizing the environment and ensuring social and economic benefits. In short, all works should promote not only stability and longevity, but also increase the overall well-being of people and the environment.

In many local communities, engagement with sustainable practices rooted in age-old wisdom has been practiced for generations. Local wisdom is developed and practiced within a certain community, often tied to a particular local area. It is passed down through generation, and it teaches the community about their very own cultural and traditional knowledge (Hunaepi & Firdaus, 2017, p. 478). Local wisdom has been working as a foundation for the understanding and the implementation of sustainable living concepts, with the ultimate goal of enhancing the well-being of the community. Within many ethnic communities, specifically, local wisdom has evolved with the community’s natural intuition to live in harmony with the nature. This ensures the resilience and longevity of both the community and the environment.

One of the ways to see how the cultural and traditional knowledge in the forms of local wisdoms are being passed down within a certain community is through folktales. These stories, rich in community values and cultural practices, often provide insights into the community's concept of sustainable living. Folktales serve not only as a creative outlet for the community but also as a means of revealing their perceptions of the human-nature relationship (Nabulya, 2022, p. 310). As mentioned earlier, local wisdom embodies the community's commitment to living in harmony with nature. Therefore, it is not surprising to find that folktales also serve the same purpose. In many cases, folktales can also serve as a tool to encourage specific behaviors, including the promotion of sustainable living practices (Mitra & Sameer, 2022, p. 246).

The promotion of sustainable living practices through the incorporation of local wisdom found in folktales also fervently advocates the principles of green technology, as it aims

to minimize humans' negative impact on the planet and contribute to a more sustainable way of living. In its own community, local wisdom, in a way, holds significance in enriching the discourse of green technology.

In our pursuit of understanding the influence of local wisdom, our analysis of Paser folktales dives into the empowering influence of Paser's indigenous wisdom on the realm of green technology. The deeply rooted knowledge from the cultural tradition of the Paser community offers profound insights into how local wisdom has been advocating for a more sustainable way of living through the community's unique form of green technology. Our objective is to explore the intricate relationship between local wisdom and the principles of green technology, suggesting that a nuanced understanding of traditional culture might pave the way towards sustainable development and eco-conscious living. Employing a descriptive qualitative methodology, this study leverages the rich tapestry of Paser's folktales as its primary data source. The analysis seeks to explore the presence of substantial local wisdom embedded in Paser's folk narratives, positively advocating the principles of green technology.

Literature Review

In the realm of literature, culture and the physical environment, the investigation of culture and natural environment is analyzed with the use of ecocriticism. Ecocriticism focuses on the connection between literature and culture with the physical environment. It emphasizes on the idea that literature and culture influence and are influenced by the natural environment (Glotfelty, 1996). When used in the analysis of literature and culture, ecocriticism explores ways in how the study builds ecological insight, environmental ethics, natural conservation awareness, and similar values (Dewi, 2016).

Ecocriticism also aims to explore the connection of human and nature, suggesting a positive connection between the two realms. Both human and its physical environment are not only connected to each other, but depend on one another. Therefore, a harmonious relationship between human and nature are not just suggested, it is—in fact—an ultimate goal. In its effort to create a more positive connection of human and nature, ecocriticism also delves into how the traditional culture also take part in the effort to positively maintain the physical environment. Suggesting that by involving local knowledge and values, humans can achieve their key environmental goal, namely saving the future of the earth (Endraswara, 2016).

In the multifaceted exploration of the relationships between culture, literature, and the physical environment, our investigation turns to the unique context of Paser folktales. The Paser tribe, also known as the Dayak Paser, is an ethnic community whose ancestral territory positioned in the southern part of East Kalimantan, Indonesia. The land of Kalimantan is inhabited by four main tribes, they are Dayak, Kutai, Banjar and Melayu (Nugroho, et al., 2023); and Dayak Paser is one of the many existing varieties of the

Dayak tribe. The Paser tribe is considered one of the oldest ethnic groups in the island of Kalimantan/Borneo, with roots dating back to the establishment of the Sultanate of Paser in the early 16th century. Today, the Paser people reside in several areas in both East Kalimantan and South Kalimantan provinces. Like many other ancient communities, the tribe is rich in a collection of tales that carry local wisdom within their narratives.

Within the scholarly landscape, the folktales and local wisdom of the Paser tribe have been studied to showcase the richness of the tribe's cultural heritage. The ongoing academic discourse surrounding these cultural intangible assets has generated various types of discussions.

A study focuses on the 7 cultural dimensions found in Paser folktales. These cultural dimensions include: the cultural values, the human living equipment system, the livelihood system, the community system, the language system, the art system, the knowledge system and the religious system. In one of the findings related to the livelihood system, this study suggests that the people of Paser possess a solid relationship with the nature. To meet their needs, the tribe relies heavily on nature while simultaneously developing ways to improve and care for it, as their livelihoods depend on it (Choirudin & Ratnawati, 2018, p. 51). This finding is also supported by Amanat (2019), who suggests that Paser folktales convey a message of a positive and harmonious relationship between humans and nature. This is evident in the tribe's use of distinctive terms related to nature and traditions, signifying respect for the natural environment. The folktales also convey explicit messages that strongly emphasize the importance of a good treatment to the mother earth. Local wisdom and even superstitions among the people of Paser manifest because of their awareness of the necessity to establish environmentally friendly rules and regulations for sake of the natural environment.

Also, on the topic of myths and superstitions that grow among the people of Paser, in investigation of one Paser folktale entitled "Kembar Buaya", a strong connection between human and the nature is clearly suggested. In the analysis of this folktale, Wijayanti, Mursalim, & D. (2021, p. 745) show how animals serve as crucial connectors between the natural and supernatural worlds. In this particular story, the crocodile is one of the animals being represented. This demonstrates that not only does the natural world hold a significant place in the community, but it is also intertwined with their spiritual beliefs. It suggests that they incorporate nature into their faith as a way of honoring it and recognizing its powerful force. For the Paser community, the integration of nature into their lives even extended to naming places after certain natural phenomena. This is believed to be their way to honor the nature. For instance, in the modern Penajam Paser Utara district, certain places derive their names from natural phenomena. Examples include Nipah-Nipah, named after the Nipa palm trees, and Gersik, named after *kersik*, which means sand. Both names reflect the natural characteristics of the areas, with Nipah-Nipah believed to have been abundant with Nipa palm trees, and Gersik being a sandy coastal area (Mustikawati, 2019, p. 50).

Another aspect of the discussion on Paser folktales and local wisdom revolves around their valuable potential in teaching character education. For instance, in the analysis of a folktale titled “Putri Petung,” it is suggested that the story holds the potential to communicate important concepts to young readers. These concepts include environmental awareness, the necessity of natural conservation, and the significance of fostering individual and collective community resilience (Qomariah, Rokhmansyah, & Purwanti, 2023, p. 87). Furthermore, other studies have ventured into the development of real-life applicable teaching materials for young readers, focusing on diverse subjects. They include teaching sociocultural values and literary criticism (Ratnawati, Musdolifah, & Maryatin, 2020), as well as teaching the national and local languages (Romadhon, Maryatin, & Ratnawati, 2022). This also provides further evidence of how literature and culture, including folktales, can serve as a medium for educating young learners; since they offer young readers with lessons aimed to help readers to develop cognitively, socially and morally (Sarumpaet, 2010, p. 6).

To enrich the discourse on the significance of Paser folktales, this paper aims to explore the central role of local wisdom in driving advancements in green technology. This implies a commitment to suggesting sustainable living practices. Through their stories, the Paser community transmits vital life lessons, ethical guidelines, and sustainable practices, creating a bridge between the past and present. These timeless lessons remain relevant to contemporary challenges, including the promotion of environmentally friendly practices and the empowerment of green technologies.

Results and Discussion

Paser's folktales have the potential to play a crucial role in advancing green technology. At the very least, the role encompasses diverse domains; such as agriculture, resource management and utilization, architectural practices, trade systems, cost-effective solutions, and environmentally friendly solution.

Technology advancement in agriculture

The folktales and local wisdom of the people of Paser provide evidence of their historical reliance on farming and hunting for livelihood. It is suggested that cultivation and hunting in Paser were communal activities, emphasizing the principle of mutual cooperation. They specifically own a term for this cooperative work; a life principle called *gawi segumi*. This principle emphasizes strongly on community cooperation and mutual beneficial outcomes; a state in which no one is disadvantaged and everyone can enjoy equal results (Syahiddin, et al., 2013, pp. 14, 51).

In relation to the principles of green technology and technological advancement in agriculture, the people of Paser demonstrated their innovative practices through the method of shifting cultivation. This approach aimed to maintain soil fertility and facilitate land regeneration over time, as collective farming activities were constantly on the move (Syahiddin, et al., 2013, p. 14). Their commitment to preventing land

degradation extended to closely monitoring the growth of plants in their cultivation areas. They even sought the guidance of spiritual leaders to establish a connection with the supernatural realm, ensuring they had “permission” to work on the land (Yulianto, 2013, pp. 143-144). Traces of this agriculture advancements can be seen in stories like “Puteri Petong”, “Lalung dan Puteri Junjung Bulau” and “Hasan dan Husin” (Syahiddin, et al., 2013, pp. 14, 31, 116).

Technology advancement in resource management and utilization

To support their agricultural practices, the people of Paser embraced green technology principles in resource management and utilization. This is evident in their historical use of *lumbung padi*, their community-specific rice barns, as depicted in “Lalung and Puteri Junjung Bulau” (Syahiddin, et al., 2013, p. 45). The barn functioned similarly to modern rice barns. *Lumbung padi* incorporated effective storage solutions and a resource inventory system for the community. It showcased the integration of smart resource management and utilization, aiming to achieve sustainability and resilience. Rice barns were collectively owned by the community, emphasizing the significance of collective resilience. By integrating such advancements, the community actively enhanced a more sustainable and environmentally friendly technology, aligning with the principles of green technology.

1. Architectural practices

As previously mentioned, the life of the Paser community is strongly intertwined with nature. Therefore, the utilization of green technology principle can also be observed in their architectural practices. The tale “Putri Petong” illustrates how the community depended on nature; not only for their daily sustenance needs but also for clothing and shelter. They used tree barks for clothing and as house walls, while tree trunks and Nipa palm leaves were employed for shelter (Syahiddin, et al., 2013, p. 14).

It is evident how their reliance on nature is exceptionally strong. This dependence is reflected in various life activities, where they not only demonstrate their spiritual beliefs (Syahiddin, et al., 2013, p. 51), but also showcase environmental care. Their natural environment is an integral part of their identity. The earth has provided them with life, and this awareness drives their commitment to preserving nature as a means of survival. Living in balance and harmony with nature is not merely an expression of gratitude; but it has become a fundamental part of their existence.

2. Trade systems

Before the existence of currency, barter system was used by the society to meet the livelihood needs. This trade system obviously has been practiced since the ancient times. Similar to barter system, the Paser community employed a practice called *olo pakut* (Syahiddin, et al., 2013, p. 14). This is shown in the tale of “Putri Petong”.

Though this practice is no longer relevant with the modern time trade system, it is interesting to see how this historical practice actually provided insights into the tribe’s

eco-friendly and sustainability principles of the green technology. In the Paser community, *olo pakut* means *hari pesan*; in which it could be directly translated into “ordering day”. The people of Paser only ordered necessary goods to be exchanged on predetermined days. This showcases their localized and resource-efficient commitment, which also reflects the principle of green technology. Their barter system prioritized on resource conservation and equitable exchanges; suggesting a more environmentally conscious and sustainably-driven trade.

3. Cost-effective solution

On the matter of cost-effective solution, one examples being highlighted by the tale of “Hasan dan Husin” is how the people of Paser had their own way to make a good use of *kelapa tunggal*, the coconut. In the narrative, the local wisdom shows how *kelapa tunggal* is believed to have a healing ability. The tale goes by saying that the local healer uses the coconut water to heal the sick princess (Syahiddin, et al., 2013, p. 129).

For Paser community, coconut was a versatile plant. They utilized almost all parts of the coconut plant. For kitchen utensils, they used the trunk of the coconut tree. The trunks were also employed for decorative purposes; for example, in creating furniture. Also related to the previous section about the architectural practice, oftentimes they also took advantages of the trunk as building materials and the dried leaves as the roofing material. They also utilized the leaves as weaving materials for various daily items. Even in this context, the coconut water was used by healers because it was believed to have medicinal properties.

This utilization of a single resource into multifaceted utility shows how the traditional practices suggest the principle of green technology, showing a cost-effective and sustainable solution from the readily available resources. In addition, by utilizing the all-natural approach to health treatment, the community introduced a reliance on a natural and locally-sourced health solution. This reflects how the community’s approach to resource was rooted in the cost-effective solution that aligns with the framework of green technology.

4. Environmentally-friendly solution

Last but not least, the green technology principle that is empowered and suggested by the folktales and the local wisdom of Paser community is the showcase of environmentally-friendly solution. In the tale of “Hasan dan Husin”, the narrative shows one of the examples in which how environmentally-friendly solution was employed by Paser people. The story showcases the character Husin creates *tikar* and *lampit*, which are woven mats made from rattan (Syahiddin, et al., 2013, p. 129). By the community, such mats not only serve as a platform to sit or sleep on, but also showing their environmentally-friendly solution principle aligns with the green technology. This is just one of the examples of how the community were accustomed to using readily available sources in their environment to sustain their daily lives.

In addition, the conscious practice of trading the woven mats, the manually crafted item, to the other members of the community also promotes a potential economic value of the eco-friendly solution they had practiced. It shows the fact that when practiced correctly and ethically, eco-friendly solution might have a potential economic dimension into it. As long as these solutions are practiced with the primary objective of sustainability, even the economical layer of it should show a broader context of the use of green technology; aiming for a more sustainable way of living.

Conclusion

In conclusion, our exploration of empowering green technology through local wisdom in Paser folktales reveals a profound interconnection between traditional wisdom and modern innovations. The Paser community is rich with its cultural narratives, as depicted in their folktales. These folktales, however, not only serves as stories for and about the community itself; but also contains their local wisdom. This local wisdom has been practiced and integrated throughout the history of its local community. Interestingly, the local wisdom found in the folktales suggest a profound interconnection between humans and the natural environment. Not only that it has been suggesting a more positive and respectful attitude towards the nature, but it also reflects the call for humans to live a harmonious existence with the nature. This has been the foundation of promoting the idea of sustainability. Additionally, in a more practical sense, it serves as grounding principles for green technology practice. Through the integration of local wisdom into modern green technology, a harmonious fusion that spans various domains is clearly reflected; from agriculture and resource management to architectural practices, trade systems, cost-effective solutions, and environmentally friendly practices. Drawing parallels between historical practices and contemporary green technology, this paper advocates for an approach in green technology that leverages traditional knowledge; exclusively aiming for sustainability.

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