

Environmental Education Values for Adult in 20th Century's Javanese Cyber Novel

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Abstract-This research is an attempt for explaining the value of environmental education in *Quadriologi Novel Creation Ki Padmasusastra (QNCKP)* in the perspective of Javanese culture. This research uses paradigms Qualitative research. The research object is cyber literature. The main data this research are four novels created by Ki Padmasusastra. Technical data analysis uses content analysis technique through the perspective of culture hermeneutics. The research result that QNCKP is contemporary Javanese literature that describes socio-culture conditions of strong Java environment ethical value in 1901 until 1924. Pro-environmental attitudes inherent in QNCKP can play an important role in fostering a sense of human responsibility towards the environment. The significance of the environmental ethics in QNCKP contributes to the reorientation of several views on traditional environmental practices in developing countries. An important implication of the finding research is that human awareness to respect each other among existing entities will be able to build strength that can guide humans to be ethical towards all elements of life. Through its intrinsic reading, the values of education in QNCKP can be used as a platform for ethical environmental education. Therefore, QNCKP is involved in ecology in three ways, namely; environmental education, scientific intellectuals, and practical.

Keywords-Education Environmental; Adult Education; Ki Padmasusastra; Cyber Literature, Javanese Literature, Ecocriticism.

I. INTRODUCTION

The fate of the earth today has indeed reached a very dire situation. This problem is at least motivated by the scientific and industrial revolutions activated by Western capitalist countries, which continue to dominate cultural, political, and environmental aspects. In the past 300 years, the industry has continued to dominate the earth and contaminate nature [1], by only providing commercial interests [2]. Based on statistical data, [3], industrialization has increased disasters over the past 20 years. This resulted in increased deaths reaching an average of more than 99,700 deaths per year between 2004 and 2017. Global industrialization, according to [4] "has enabled Western capitalist countries to dominate and destroy the natural environment". Thus, industrialization clearly encourages humans to gain power over nature, while ecological knowledge and awareness continue to disappear [5]. The result is an environmental crisis.

A number of strategies in recent years have been proposed to address environmental problems; such as the development of conservation management of environmental management [6]–[8]. In the realm of education, various curriculum changes that emphasize contributions to environmental discourse have also been tried [9], [10]. This is because of environmental education [11]–[16] is an important factor in minimizing environmental damage. Environmental awareness efforts have also reached the philosophical and ethical domains [14], [17], [18]. However, it seems that the efforts made mostly focus on technical and handling rather than prevention. Meanwhile, the development of an independent awareness and sensitivity of attitude towards the environment has not been done much. For this reason, efforts are needed to build public awareness about the environment.

Many ideas emerge from various perspectives to think about people's awareness of the environment. For this problem, creative stories, literary works, and traditional wisdom can be important sources for building awareness, [19], and directing someone to care about the environment [20]. Because on the one hand, literature often provides a deep understanding related to environmental values [21]. The significance of traditional knowledge and wisdom in literature can also function as a practical foundation [22], about pro-environment. On the other hand, literature is an educational medium that is considered to have the power to build awareness and foster positive human attitudes about the great narrative of saving the environment [23]. Thus, through values in literature, the public (readers) are expected to have knowledge, attitudes, motivations, and a willingness to solve and prevent environmental problems in their surroundings.

Much of the literature and educational media has been concerned with the explorative power of environmental issues in literary works, however, the various studies conducted are still oriented towards Western literary studies and paradigms [14]. There has been no research that tries to explore Orientalism literature, especially Javanese¹ literature, which is oriented towards Eastern wisdom. Orientalism literature is important because it is dealing with local wisdom that emphasizes the principle of harmonization and nonviolent coexistence [17]. For this reason, QNCKP was chosen because it considers three things: 1) QNCKP is Javanese literature which has strengths in aspects of environmental wisdom, both philosophical and practical; 2) Ki Padmasusastra (author) is a great Javanese writer who dominated the entire transition to modern times. Through QNCKP, Ki Padmasusastra can provide readers with education about ecological awareness in the reciprocal relationship between humans and the environment; 3) QNCKP is literature with high-level stylistic [24], most of the readers are adults (students, researchers, and observers of literature). For this reason, environmental education in this context emphasizes environmental education for adults.

As it is known that adult environmental education is a new field of study, as “the result of combine environmental movements and adult education, by combining an ecological orientation with a learning paradigm to provide a strong educational approach to environmental problems” [25]. There are important reasons why adults should be given the opportunity to be part of the educational goals, namely: 1) learning is a much more complex and broad process, regardless of age; 2) education is not only done formally in schools but can also be informal after school; 3) Formal environmental education may not be the only strong option when considered with the latest social, economic, political and environmental conditions.

This research is an interdisciplinary study of literature, environmental education, philosophy, and culture, so the approach used is ecocriticism. Therefore, the study of ecocriticism deals with critical analysis of the representation of nature in literary texts in a commitment to environmental practices and solving ecological problems [26], [27]. In essence, ecocriticism, then, is one that tries to transcend human/natural, art/life, technological/natural duality aimed at leading to a sustainable life.

This research is an effort to involve and make literature as the mainstream of cultural movements about solving global environmental problems. Literature takes a role outside the structural and political steps in nature conservation. The orientation of this research is to explore the insights gained from Javanese literature and culture, which can be used to make new approaches in relation to environmental issues.

II. METHOD

The researcher chooses to use a qualitative research paradigm because research is a phenomenon that has not been revealed and cannot be obtained through statistical rules [28], [29]. Qualitative methods are suitable for revealing various qualitative information in literary texts that emphasize the assumptions, values, beliefs, and ideologies of each researcher [30].

The object of this study is referred to as cyber literature because data is taken online [31] on the website <https://www.sastra.org>. Research data sources are four novels by Ki Padmasusastra, detailed as follows.

Table 1. The data from four novels created by Ki Padmasusastra

No.	Title of Novel	Publication Year	Catalog Code
1.	<i>Serat Pethikan Saking Kabar Angin (SPSKA)</i>	1901	1901-315, #39
2.	<i>Serat Rangsang Tuban (SRT)</i>	1912	1912, #516
3.	<i>Serat Prabangkara (SP)</i>	1921	1921, #43
4.	<i>Serat Kandha Bumi (SKB)</i>	1924	1924, #112

This research data in the form of text (words, phrases, and sentences) which implicitly or explicitly contains aspects of environmental education values. Qualitative data are classified through content analysis techniques based on text or main themes [36]. Efforts to uncover the meaning in QNCKP are done very carefully by paying attention to signs, symbols, categories, and meanings. The analysis steps include: 1) reading of the novel as well as collecting data [text] in accordance with the categories of environmental education values; 2) study and analyze data carefully in accordance with the research objectives; 3) interpret and verify

¹ Javanese is one of the majority tribes in Indonesia. They inhabit especially in the provinces of Central Java, DIY, and East Java. Not only in Java, but Javanese people are also scattered in various islands in Indonesia and even abroad. However, [40] called Javanese are people whose native language is Javanese. In short, Javanese are the original Javanese inhabitants who live in the central and eastern parts of Java, who speak Javanese.

data; 4) make conclusions; 5) and after the conclusion is made, the researcher checks again to ensure that all processes are in accordance with the aims and objectives of the study.

III. FINDING AND DISCUSSION

Experts recognize that literature can indeed give environmental education for readers [26], [27], [37]. The narrative in the literature is recognized to give many educational values. In QNCKP, readers are given a lot of learning about environmental awareness. Based on the data, 14 types of education were obtained which included moral, spiritual, aesthetic, nature conservation, water conservation, dry land conservation, water altruistic, cave altruistic, plant altruistic, psychological, semiotic, cultural, philosophical, and herbal traditions. Of these 16 types of education are categorized into 29 more specific forms of education. Exposure by type of education, the form of education, data code, title, and novel pages are described in the following table 2.

Table 2. The form and type of environmental education in QNCKP

No.	Type of Education	Form of Education	Data Code	Novel & Page
1.	Moral	Respect for nature, rivers and fish	EE.01	SKB/P.34-35
		Maintaining the beauty of the river	EE.02	SKB/P.40-41
		Maintain the natural beauty	EE.03	SP/P.23
		Raise people about the benefits of water	EE.04	SP/P.23-24
		Cultivate a positive attitude towards the environment	EE.05	SPSKA/P.237
		Obedient to parents	EE.06	SPSKA /P.313-314
		Maintaining the life of harmony between humans and the environment	EE.07	SPSKA/P.27-28
2.	Spiritual	Give away natural products	EE.08	SKB/P.3
		Believe in the existence of metaempiris nature	EE.09	SPSKA/P. 6-7; P.85-89
		Appreciating the value of the Cave as a spiritual medium	EE.10	SPSKA/P.71-72
		Respect the value of nature as a good location for meditation	EE.11	SP/P.95-96
3.	Aesthetics	Respect the aesthetic value of nature	EE.12	SP/P.23
		Appreciate the cave's aesthetics	EE.13	SP/P.47-48, SP/P.45-47
		Appreciate the role of natural aesthetics in relation to the human psychological impact	EE.14	SPSKA/P.92-93
4.	Nature conservation	How to work on the fields	EE.15	SPSKA/P.38
		Build a residence with natural ornaments	EE.16	SPSKA /P.148-150
5.	Water conservation	Processing river water for irrigation plants and mosques	EE.17	SP/P.61
		Treat water for irrigating plants	EE.18	SPSKA/P.39-40
6.	Dry land conservation	Processing dry land into fertile land	EE.19	SPSKA/P.214-217
7.	Altruistic water	Natural services of water on plant life	EE.20	SP/P.23-24, SP/P.59-60, SP/P.77,
		Natural services of water to human life	EE.21	SPSKA/ P.21-22, P.71-72, SKB/34-35
8.	Altruistic plants	Cave services as human habitation	EE.22	SP/P.35
		Appreciate natural aesthetics	EE.23	SPSKA/P.3
9.	Psychic	Plant services for human life	EE.24	SRT/P.48-49
10.	Semiotics	The beauty of nature can provide psychic calm	EE.25	SP/P.23-24, SP/P.21-22

11.	Cultural	Appreciate animals as symbols of wealth	EE.26	SKB/P.3
12.	Philosophy	Appreciate the results of nature for its benefits in cultural	EE.27	SPSKA/P.8
13.	Herbal tradition	Get lessons from animal life	EE.28	SP/P.23
14.	Altruistic Goa	Appreciate plants for their benefits as traditional medicine	EE.29	SKB/P.7-9

Note: EE = Environmental Education
P = Page
SKB = *Serat Kandha Bumi*
SPSKA = *Serat Pethikan Saking Kabar Angin*
SP = *Serap Prabangkara*
SRT = *Serat Rangsang Tuban*

The environment is imagination, social, character, and shadow puppet imagery in the QNCKP story represent the conditions of the people of their time. The environmental imagination displayed in the story refers to the author's sociocultural experience. The storyline in QNCKP illustrates the situation of people who are still very close to nature and traditional culture. This is evident in the setting, character behavior, events, and storyline. This condition can make a positive environmental education insight for the reader. The form of education values in QNCKP is explained as follows.

Moral Education

The moral to the environment is a way of looking that humans have an ethical obligation to respect nature [19]. The form of moral ideology is seen, such as in the *Fiber Kandha Bumi*, namely in the escape of Dewi Siti Pasir when leaving the kingdom to look for her brother, he stopped in a river with a very beautiful atmosphere. Even though his emotional state was very chaotic, he was still able to hold his emotions. In fact, when he threw his feet into the river, he was not angry when the small fish ate his feet.

“Dewi Siti Pasir does not travel in a certain direction, / ... / The journey stops at a very large spring in the middle of the forest / ... / The spring water is very clear, abundant, many fishes waders passing by crammed in crowds, three of them lined up to stick to the roots of trees the banyan that sticks in the water / ... / The goddess was impressed to see, stopped by the pool, sat on a rock, feet put in the water while rubbing, climbing eaten by Wader Fish scrambling, some biting nails to make it tickle” (Padmasusastra, 1924, P. 34-35).

That is, under any circumstances, there is no reason for humans not to respect nature. Although inferior, nature still has a value in itself, which under certain conditions, and even often, helps humans to be a solution to psychological problems, as in this case.

Furthermore, the incident when Retna Siti Pasir prefers bathing in the river than at home (EE.02, SKB / P.40-41) is also a form of human love for the river. Then, the attitude of Rara Apyu (EE.03, SP / P.23) who tried to enjoy all forms of natural beauty in his journey while seclusion. Then, we also got lessons from Prabangkara and Rara Apyu figures about the use of water in harmony (EE.04, SP / P.23-24). The story of Prince Prakêmpa and Dèwi Erawati who were affected by natural disasters (EE.06, SPSKA / P.313-314) provides a lesson for us that, nature also has the role of punishment for children who do not have good morals to their parents. Then, through Dèwi Angin-Angin as he enjoyed the beauty of the river and the fish in it (EE.07, SPSKA / P.27-28) is an important example of moral education.

The positive morals of Javanese society are indeed based on the view that humans and nature are a unity of existence [38]. Therefore, both must be maintained. The character's awareness of nature can encourage humans to form ecological moral systems [19], [23]. This awareness is related to Javanese society's understanding of the universe as an entity that has value, so it is worthy of respect, care, and care.

Spiritual Education

Javanese people in QNCKP have strong spiritual beliefs. Through the figure of Ki Jaga Mandala who has the wealth that his wealth is given to the poor (EE.08, SKB / P.3) is a fact of spiritual belief. This is believed to be due to the strong influence of the tradition of religious belief in Java on social empathy. Javanese people have a strong belief about economic spirituality for social practice, for the sake of creating a harmonistic life [39].

Community life in QNCKP is not only in the empirical realm but also in the meta empirical realm. The meta empirical world is depicted through the figure of Prabu Bajrapati, who is a person who has died. But it has a role in human life. The following quote illustrates this.

“O my handsome grandson, you cannot speed up time. You are destined by the gods to bring down Ngatasangin, so you will not lose you, for generations to hold the kingdom of Marutamanda, your descendants,” (SPSKA/P.6-7)

The people in QNCKP highly respect the cave because the cave is one place that has spiritual value. Data EE.10, SPSKA / P.71-72 and SP / P.95-96 provide insight into us about the behavior of Javanese people who use the cave as a place to meditate. This is indeed still an influence of Hindu-Buddhist beliefs (Magnis-Suseno, 1984), and the influence of old wayang stories rooted in Javanese society. For this reason, this traditional Javanese spiritual insight can help humans to keep nature.

Aesthetic Education

The setting in QNCKP indeed tells a lot about the natural condition of rural Java which is still very beautiful. There is no story about human forms of crime against nature. The storyline of Prince Prabangkara's journey to the countryside provides insight into the panoramic beauty of lush rice fields and animal life that is still awake.

“The sound of water from the rice field dike falls in the paddy field / ... / The stag flying in sequence as if to show the direction of the road, the Emprit repeatedly passes through the nest to the middle of pandanus leaves, the tree is curved in the paddy water channel, making the Prince's heart uneasy.” (Padmasusastra, 1921, P.23).

In addition to the natural beauty of rice fields, QNCKP also tells about the beauty of the cave. In data EE.13, SP / P.47-48, the condition of the cave has an interesting shape, its place is on a mountainside, and the largest has been inhabited by humans. This is inseparable from the Javanese tradition which regards the cave as a strategic and sacred place to conduct austerities.

Description of natural aesthetics can have a positive influence on human psychic. This is illustrated in EE.14, SPSKA / P.92-93, which is a story about the story of the East Radene's journey to search for Dèwi Sumilir. In this story, East Radèn seems dissolved in the atmosphere in the middle of a very beautiful forest. As if he forgot about the problem that became a psychological burden. Thus, the relationship between the aesthetic description of Javanese nature and the events of the story can give lessons for us that, preservation of natural aesthetics can have a positive influence on various aspects.

Environmental Conservation Education

The forms of conservation in QRKKP are found in three forms. *First*, the form of nature conservation is illustrated through the rules for working on rice fields, which can be seen in data EE.15, SPSKA / P.38. Furthermore, in data EE.16, SPSKA / P.148-150, it also illustrates the form of nature conservation in the form of housing construction using tools from natural elements.

“The young merchant made a square house, sixty doors, in the middle was given a gap for the windway using funnel-like handling the mouth of a dragon falling in the intestines could give fresh air to the buildings around the house, the floor of the yellow Cendani stone the road to the room was given a mat made of embroidery by Leprosy /.../” (SKA/147-150)

The narration gives us an illustration of how Javanese people are very close to nature. The event of the unification of nature in a home building is one way for humans to care for nature, as well as a tangible form of the union of human beings with natural values.

Second, water conservation. This is illustrated in the data EE.17, SP / P.61 and EE.18, SPSKA / P.39-40, which is a narrative about the management of river water flow used to irrigate plants and meet water needs in the mosque. Conservation efforts show that, water is one of the sacred elements of life in life (compare, Widodo, 2013). Water representations that are so important are guiding various ways in humans to continue to care for and manage them in a way and culture at a certain time.

Third, dry land conservation. The majority of the environmental conditions in QNCKP are indeed dominated by a fertile natural atmosphere. However, in SPSKA, there is an area that has a land condition

that seems less fertile. This is illustrated in EE.19, SPSKA / P.214-217, namely in the course of events about the escape of Jaka Erawana, Jaka Bayu, and his soldiers from the pirate prison. In an effort to survive, they are trying to cultivate dry land so that it can become food land. Cultivation of land is done in cooperation, and with traditional norms. In this case, environmental conservation does need individual initiative [42]. For that reason, here, we can see how the efforts of the Javanese people to care for nature for the future of life together.

Natural Altruistic Education

Altruistic nature is a service provided by nature to live on earth. The abundance of natural resources in Java is indeed very supportive of the survival of plants, animals, and humans. In the QNCKP, three types of altruism are found, including altruism of water, caves, and plants, which are detailed as follows.

First, Altruistic Water. In the QNCKP many channels display the water element. This cannot be separated from the fact that geographically, Java has many water resources. In data EE.20, SP / P.23-24, SP / P.77, natural water sources are useful for flowing plants. The availability of enough water causes a variety of natural plants and plant care can seem to be fertile. Data EE.20, SP / 59-60 describe water as a means of transportation. Furthermore, water is also another benefit, as illustrated in data EE.21, SPSKA / P.71-72, SKB / P.34-35, which is about the use of water for the needs of human life. That is, water does give many services for life on earth. For this reason, human sensitivity and human awareness are needed to be able to keep up water availability for the sake of sustainability.

Second, Altruistic Goa. Some traditional Javanese people use the cave as a place to live, as in EE.22, SP / P.35. Then, in certain situations, the community also often uses the cave as an ascetic place, as noted in EE.10, SPSKA / P.71-72; EE.11, SP / P.95-96. In the QNCKP, the cave is not only a medium for the practice of human life, but it can also appear only as an author's narrative about the natural beauty of Java. This narrative can be seen such as in data EE.23, SPSKA / P.3. This means that indeed, the beauty of the natural form of Java with the beauty of caves, all do have invaluable services to support the lives of all beings.

Third, plant altruistic. The incident about the departure of Prince Warihkusuma, because he was driven out of the kingdom (EE.24, SRT / P.48-49), is a reflection that humans depend their lives on the forest. Every day they only eat young leaves and various plants. For that reason, the forest with all its contents is very real to give altruistic to other living things.

For these three problems, the altruistic meaning is to take a distant view of the values of nature. Although, according to [43], nature sometimes also provides services for bad people, however, an understanding of altruistic nature is an effort to open the eyes of the human heart to act pro-environmental to protect the natural environment and society as a whole.

In the next flow event, QNCKP also displays a form of psychic education. This is illustrated through the character of Prince Prabangkara when looking for the departure of Rara Apyu. On his way, he stopped in a forest. There are many things that affect his psychic when he is dealing with nature, along with some animals that he meets. The following quote illustrates that.

“The journey is not necessarily the direction / ... / The seagulls fly in sequence as if to indicate the direction of the road, the Emprit birds repeatedly pass through the nest to the middle of pandanus leaves, the tree is curved in the paddy waterways, making the prince uneasy. He said to himself: How small animals can get happiness, everywhere always with their partners. Different from me” (Padmasusastra, 1921, P.23).

In a chaotic situation, sometimes the beauty of nature can also be a match for the beauty of someone we love. Likewise, the analogy of human beauty with natural beauty is a form of deep appreciation of natural values. Then, the anxiety of Prince Prabangkara when he saw the excitement of the birds was a very high form of respect for animals. That is, animals are not ordinary creatures, but animals are creatures that are worthy of respect, which might give an example of happiness for humans.

Javanese culture is indeed often the same as symbols. In traditional Javanese culture, an indicator of one's wealth is still based on the number of livestock (EE.26, SKA / P.3). Even though animals are a symbol of economic success, they also need to be seen as a way to sustain animal life. Another form of Javanese cultural symbolism about nature is also illustrated through the custom of Dèwi Angin-Angin to collect gambier [jasmine] flowers as jewelry (EE.27, SPSKA / P.8). This is indeed inseparable from the strong traditions of Javanese people that have been rooted since ancestors. For Javanese people, jasmine flower has a philosophical meaning, namely “*Melati*”, an abbreviation of “the taste of *Melat saka njero ati*”, which means

"sincere sense from the heart". This philosophy means that Javanese people strive to uphold loyalty and honesty. Every action and speech will always be based on sincere feelings.

Javanese people in QNCKP still have a positive relationship with animals. Animal happiness is sometimes used as a comparison of the happiness of human life. Prince Prabangkara's attitude (EE.28, SP / P.23) is a reflection of the attitude of Javanese people to look at animals more radically. Animals are not always inferior creatures, but animals are a source of life learning, as well as examples of life that deserve to be role models. The meaning of animals in this way is very helpful towards animal life expectancy in a sustainable way.

Javanese people in QNCKP still rely on traditional medicine. In fact, there are some people who combine traditional medicine with spiritual rituals. The story of how to treat Kyai Rasatala so that Mbok Jaga Mandala became pregnant, such as (EE.29, SKB / P.7-9), is illustrated about the collaboration between potions, *petung* (calculations), and prayers.

In the narration there is important information that the Javanese people in the time of the Prabangkara Fiber were created (in 1924) still using traditional methods of treatment along with complex behavior. The method seems to have indeed become a habit of a hereditary community that is integrated with the Islāmic way. And, with strong conviction, this method often succeeded in achieving the desires desired by the community.

IV. CONCLUSION

QNCKP is contemporary Javanese literature describing the sociocultural conditions of Java in 1901 s.d. 1924. Through the plot, setting, and character traits, implicitly or explicitly is a reflection of the Javanese way of life that still prioritizes an ethical sense of the environment and all elements of nature. This ethical feeling is an ideal standard of living in accordance with the values that developed in Javanese culture when the QNCKP was created.

Since the narrative originated and developed, QNCKP has provided a lot of education for readers about nature and human relationships from the perspective of Javanese culture. Environmental practices inherent in the life of Javanese people strongly support the pro-environment movement for the long-term. The traditional Javanese knowledge system teaches us about restoring unity of mind about human awareness of nature.

The pro-environment attitude inherent in QNCKP can play an important role in maintaining a sense of human responsibility towards the environment. The significance of the ecological narrative and environmental ethics in the QNCKP contributes to the reorientation of several views on traditional environmental practices in developing countries. Therefore, it is very important to involve literature as a means for mainstreaming pro-environmental education messages.

An important implication of the research findings is that human awareness to respect each other among existing entities will be able to build strength that can guide humans to be ethical in their environment. The practice of Javanese life that upholds harmony, empathy, respect, and mutual need for non-human beings is valuable learning for literary readers. Thus, QNCKP is involved in ecology in three ways, namely environmental education, scientific intellectual, and practical.

ACKNOWLEDGEMENT

We would like to thank the LPDP (*Lembaga Pengelola Dana Pendidikan*) for providing this research funding support.

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