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## **TRADITIONAL KNOWLEDGE ON ECOLOGY IN JAVANESE CHILDREN'S LITERATURE**

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### **Abstract**

*The purpose of this text-oriented study is to reveal traditional knowledge of ecology in children's literature with the possible use for introducing children to the environment. Eco-criticism and functionalism are employed as integrated approaches to search for the teachings on environmental sustainability such as a harmonious life in nature, environment preservation, and the life cycle of plants and animals. The objects of the study are three Javanese children's stories: 'It's Better to be a Rabbit' ('Luwih Becik Dadi Truwelu'), 'Flower, Butterfly, Caterpillar, and Leaf' ('Kembang, Kupu, Uler, lan Godhong'), and 'The Arrogant Cecen' ('Cecen Sing Gumedhe'). These fables are examined intrinsically, therefore, content analysis becomes a theoretical anchor. Considering the sampled stories are original tales, the values of local wisdom on how to protect ecological systems can be distilled as a directive tool for shaping children's moral-ethics and guiding them to live in harmony with their surrounding nature. Thus, traditional knowledge learned from those stories is not solely a means of legitimizing cultural traditions and educating children to love the environment, but, supposedly, they also serve as materials for storytelling because of the characteristics of each tale itself being interesting and entertaining.*

## **Keywords**

Children's Literature, Environment, Content Analysis, Local Wisdom

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## **1. Introduction**

There is a serious need of a thorough understanding about environmental problems that plague this world due to various interdependent aspects. For an instance, Roos and Hunt (2010) observed the aspect of human obligation, which essentially must be responsible for the surrounding environment, either directly or indirectly. They highlighted the huge damage towards all forms of living things along the coastal area impacted by natural tsunami devastation because humans had belittled the meaning of mangrove forest conservation. Changes happen constantly, but the fact that people are living in an era that is progressing so fast and offers instant solutions sometimes makes them ignorant, like "living in an illusion" (Bowers, 1993: 9). Ecological research, therefore, attempts to build a meaningful awareness of nature. This includes eco-critics of children's literature conducted by Murphy (2009), Kwaymullina, et. al., (2012), and Brown (2013) that has led to a means to increase children's knowledge of the surrounding nature that actually needs greater human attention.

### **1.1 Background of the Study**

The rising demand for qualified education within the last decade in Indonesia is a manifestation of the significance of the nation and character building. Thus, to achieve character education for Indonesian students, especially school-aged children, the government has enacted 18 supporting pillar values which are interconnected. Out of the 18 values, there are four prominent aspects: curiosity, nationalism, care about the environment, and responsibility which can be developed through giving children ecological knowledge as illustrated in children's literature.

Linking with the knowledge of ecology in children's literature, a critical study is required to encompass the wide range of 'ecology' terms, namely ecocriticism. Harsono (2008) identified that ecocriticism has a basic paradigm that every object can be explored in one frame of an ecological network. This paradigm causes literary works to be equipped with ecology; that is having relational patterns between plants and animals with humans, within the same environment. Accordingly, the importance of spreading knowledge about ecology through children's literature that are charged with the diversity of plants and animals in Indonesia cannot be ignored. The fulfillment of children's genuine curiosity about Indonesia's diverse flora and fauna will provoke emotions of care and concern towards the surrounding environment and construct a spirit of nationalism within ecological concerns.

This is because the framework of Eco criticism, borrowing from Roos and Hunt's notion (2010), puts a greater emphasis on national interests.

It was not exaggerating, then, when Brown (2013) argued that delivering messages from interesting stories about ecological systems to children is the same as teaching empathy towards their own land. Transmitting a view of plants, animals, and elements of nature as being animate and alive with unique characteristics and preferences forms and develops children's traditional knowledge of ecology. In the context of this study, a sense of belonging to, and loving, Indonesia will bring forth the wish to take care of everything that exists in Indonesia. The meeting point of curiosity, nationalism, awareness towards the environment, and responsibility, then, becomes a strong foundation of character building for Indonesian children.

## **1.2 Formulation of the Problem**

The existence of more than 700 ethnic and sub-ethnic groups in Indonesia renders an abundance of manifestations of culture including a great variety of folklore, which includes literary works. Discussing literary works with local color is of course inevitable because, as formulated by one of Indonesia's prominent founding fathers in education, Ki Hadjar Dewantara (1889-1959), each area has its own struggle to manifest its culture and tradition. This is due to the fact that ethnic and even sub-ethnic groups in Indonesia must face different geographical challenges in expressing their traditional culture.

In the realm of culture, 'tale' as a form of literary work is classified into verbal folklore (Propp, 1997; Finnegan, 2005; Sims and Stephen, 2005) whose root belongs in oral traditions. As one of the cultural manifestations, therefore, the fluid characteristic of culture also causes literary works to be adapted in line with the development of an era: the expression of oral tradition becomes written tradition, children's tales become written stories. As a mnemonic device, or a tool to help memorizing, a tale is found and imagined; it is a fiction or fantasy (Muhamad, Tempo 2018). Besides its function as a means of entertainment, this fictional work is believed to be able to polish sensitivity and imagination. Therefore, when the message of the story is used as guidance in life – having good moral-ethical values, its most ideal targets are children.

The presence of children's literature which reflects the richness and diversity of the unique Indonesian culture are, generally, the transformation of traditional tales. However, today, tracing this kind of literature faces two main challenges because of globalized notions. First, the language used as a medium to convey the cultural message of these stories is mostly still in the local ethnic language which is not popular anymore for children. Meanwhile, traditional knowledge about ecology needs

proper, down-to-earth, media to voice the meanings within life and continuously look for groundwork about nature. Second, the influence of technological advancements, which shapes the modern lifestyle, offers more interesting entertainment in comparison to listening to tales or reading literary works. The choice of children's stories as a tool to spread local wisdom that internalizes culture-based values and practices about nature is like a movement to return to the cultural root. This confirms Hogan's statement (cited in Kwaymullina, et.al., 2012: 2), that the search for ecology of mind is crucial. "Without it we have no home, have no place of our own within the creation".

The emerging problem, subsequently, is that the important role of language as a communication device in determining the significant meaning of cultural phenomena is often being ignored. The enactment of official language marginalizes native languages which together share the meaning of a culture. Because, as asserted by Baldwin et.al., (2014: 138), "making one language a 'national language' gives those who speak that language prestige and power over others who do not". Meanwhile, it is believed that native languages are an elegant form of communication to relate the values of local wisdom because they embody the heart of an individual and the world of the society that owns it, through poetic devices.

As a result, this concept is used as a baseline to choose the research object: three children's stories published in a local magazine using Javanese language, *Panjebar Semangat*. The usage of ethnic language in those stories surely makes the creation process closely inherent with local tradition and must be heavily influenced by the geographical circumstances where children live and interact with their environment.

### **1.3 Objective of the Study**

Illustrating the diversity of plants and animals and the way to preserve them according to Indonesian cultural traditions becomes one of the promising choices for character building in children. However, the understanding about ecology must be adjusted with the way children think and in order to shape their attitude towards the environment. Kwaymullina et.al., (2012) explained that the ideas for the preservation of nature and concerns towards traditional culture can be shared by written words, – how it is used, presented, and read, through children's literature. Traditional knowledge can be gained if the environmental issues elevated are "forest ecology, preservation of wetlands, local plant and animal diversity" (Bowers, 2006: 7). This is in line with Garrard's concept of the traditional approach, which "is meant to sustain moral claims about intrinsic value of the natural world, which will in turn affect our attitudes and behavior towards nature" (2004: 176). This framework implies that discussing traditional ecology refers to the way humans, including Indonesian children, elicit intrinsic values

towards their existence in this world and correlates with the morality embodied in their attitudes and deeds.

Thus, by exerting the three conceptual schemes as the baseline of the analysis, the main concern of this study is to unearth traditional knowledge about ecology in the selected children's stories. The result then, expectedly, can be used to promote character building- oriented education for Indonesian children.

## **2. Literature Review and Research Method**

Traditional knowledge about ecology in the children's literature studied follows the pathway of the establishment of literacy culture, which initially comes from verbal folklore: tales. The stories for children from this category have a very close bond with local wisdom, a manifestation of cultural arts that stresses cognitive allegory. It is represented by characters or deeds that describe good or bad behaviors and in general possess a meaning of knowledge, "the act or action of knowing, including consciousness of things and judgement about them" (Harris & Tolmie, 2011: 109). As such, Aristotle's ethics which asserts that being mankind with character is not only because one has achieved sufficient intellectual level, but is also able to consider what is the right thing to do and the best way to live (Barnes and Kenny, 2014). The lessons about those values is in concert with the function of children's literature, as a transformation of verbal folklore. (Sibarani in Endraswara, 2013). It can be distilled as a directive tool for ethics, a means of legitimating cultural traditions, a medium of education, and a form of entertainment.

To be more enticing, as fiction, children's literature is created to spread human values through the technique of personification. In fables, characters who exemplify good or bad values often take the form of personified animals, trees, shrubs, or other interesting things. This is also found in the children's literature explored in this study. All characters teach moral-ethical values, especially those related to knowledge about ecology. Hence, in investigating the selected fables in the range of ecological facts, an integrated approach of ecocriticism and functionalism is employed.

Since this study is text-oriented, it flows together with with the conceptual scheme of content analysis to describe the environmental aspects of the intrinsic elements of the literary work (Endraswara, 2008). Nevertheless, Nurgiyantoro (2012: 37) reminded that a text-oriented approach does not solely require the elements from literary works, but also the relationship between each element and its contribution to reach an aesthetic objective and meaning as a whole. In a different perspective, Klarer (2004, p. 15) regarded plot "as one of the crucial internal elements of literary works

because plot is the logical interaction of various thematic elements of a text". Furthermore, the events within the plot sequence of a story is used to bring up themes in daily life and specifically to deliver moral values. The plot serves as the key to trace and connect the events' causalities, the relationship between the characters, and the implicit and explicit messages on how to preserve the surrounding environment. The notions of ecological systems in the selected stories are criticized simultaneously through the perspective of eco-criticism.

Content analysis which focuses on life and moral values in literature originated from the axiom that the writers want to deliver their messages cryptically to the readers (Endraswara, 2008). This is one way to capture the message in a literary work reflecting a positive message to the readers; in this context, to Indonesian children. To get to the heart of the messages, the choice of children's literature using native language is well-grounded because culturally based values and practice are alive with local wisdom. The fact that there is a decline in the number of Indonesian children mastering their mother tongue of course signifies the loss of ethnic/cultural identity. Therefore, the only way fitting to this study is the method offered by Noels, Yashima, and Zhang (in Jackson, 2012) that is "highlighting old fashioned". As Pearson (2011: 212) previously asserted, this idea implies "promoting local values as mediators in the spread of globalization" which means synchronizing the old cultural expressions and the children's experiences of the modern era.

Referring to these two theses, a research on ecological system of written children's tales, potentially charged with sublime traditional values must be delivered in the package of current facts and realities. It is an attempt of bridging principles of the past with important standards of the present day. The environmental local wisdom has become an answer towards modern ideas. Local-global are the poles that must exist to complete each other. To sum up, investigating the messages from traditional knowledge about ecology from children's literature in this study is equal to instilling idealism about the importance of the environment. In that way, it is a mediating door between the facts of globalization and traditional values.

### **3. Results and Discussions**

'Tale' has the function of entertaining, and also of communicating inherent values of life. In accordance with its mission, tale, which comprises of a set of moral-ethical teachings (Danandjaya, 2007), has a similar stance in regard to tale as a form of entertainment reflecting truth, moral value, or even satire. Because the main function is to entertain, tale, nowadays commonly recognized as children's stories, are constructed so as to be attractive. At least, the illustrations as visual stimulation

are designed to be eye-catching as shown by the three selected children's stories (pictured below). This new packaging will return the sense of human virtues that recently have been left, not only owing to the modern lifestyle but also the unpopularity of the local language for Indonesian children.



**Figure 1:** *Illustration of the Selected Children's Literatures of the Study*  
(Left to right): *Luwih Becik Dadi Truwelu* (12) 2014; *Cecen sing Gumedhe* (24) 2015; *Kembang Kupu Uler Lan Godhong* (22) 2015

### **3.1 Learning about Animals and their Habitat in 'It's Better to be a Rabbit' ('*Luwih Becik Dadi Truwelu*')**

The main character speaking in this fable is a rabbit. The story tells how the rabbit complains repeatedly about the hot weather in a very dry season. She wants to go out from her burrow at the foot of a big tree. The rising temperature forces her to go outside. She must wander around and seek a cooler place to stay. On her way, she admires several things she does not find in herself: colorful fish and frogs swimming aimlessly in clear river water under the bright sunny day. She looks on 'the pleasantly sparkling river water, where fish and frogs are exchanging jokes' ("*banyu kali sing kinclong-kinclong ndemenakake, ... iwak lan kodok kang gegojegan*"). The attractive scenery makes the rabbit wish to be a fish or frog who are free from the heat by simply swimming around in the river instead of being trapped in her own body and drenched in sweat. She is jealous and starts self-questioning: why was she born as an animal who cannot swim? It will be a wonderful life if she could live in the cool, fresh water.

Jealousy and a desire to become a different animal, which appears to feel much more comfortable than her own body, continuously resurfaces. While enjoying a little rest under the shadow of a tree, she finds an owl sleeping peacefully on the branch of that tree. She mutters: 'How happy if I were an owl'. Similarly, when she sees a long-tailed squirrel climbing and jumping from one tree to another. This nimble creature looks so happy, swinging between the tree branches while singing little songs. However, soon, the rabbit's feeling shifts because of the hard rain.

*Langit kang biru maya dumadakan dadi mendung. Tambah suwe tambah peteng kaya tengah wengi. Angine nggebes, lan gegodongan akeh kang padha ceblok. Rupane sedela maneh udan bakal teko.*

(The light blue sky suddenly becomes cloudy. The longer it takes, the darker it becomes, just like a night sky. The wind rumbles and so many leaves fall. Apparently, the rain will come any time soon).

Since the setting of time in this story is the transition season, it explicitly teaches children to learn how animals have to adapt to their surrounding nature. They are also introduced to the challenge faced by animals during the two seasons in Indonesia, dry and rainy, which bring their own advantages and disadvantages for each of the animals.

Other than the knowledge about the temperature in accordance with an ongoing season, the information about the animals' behavior in 'It's Better to be a Rabbit' enriches children's knowledge about the habitats of those creatures. Rabbit lives in a hole beneath the ground, Owl and a great many kinds of birds live in the trees which protect them from the heat of the sun with their leaves. Squirrel, and other similar creatures that eat fruits, will find a suitable place if there are trees with a lot of branches and twigs. Fish cannot live without water, and neither can frogs – although the land is also their habitat because frogs are amphibious.

In the dry season when the sun casts its rays, heat transfers to the earth's surface so the animals living under the ground swelter. Subsequently, in the rainy season, most animals need to search for shelter. The sudden change from incredible heat to pouring rain is narrated in 'It's Better to be a Rabbit' with the rain falling like a torrent. It sounds like loud cracks due to the accompanying wind gusts, flash of lightning, and chilling sound of the rolling thunder. (*"Suwarane kemrasak mergo campur angin lesus, apamaneh dibarengi swara bledheg kang nggegirisi"*). Through this story, children who are reading or listening encounter descriptions of the animals' behavior when they must acclimate with each season. Animals can only live peacefully and far from fear if they exist in a place that is at least similar to their natural habitat. The animals will return to their natural dwellings if the weather does not permit them to enjoy their life.

The sequence in natural phenomena is that heat, a cloudy sky, and strong wind always precedes rain. When the rain falls, it is often followed by lightning, thunder, and other natural happenings. These can endanger the lives of animals, especially the small ones, as was suffered by the personified characters in the story. The tale describes how the squirrel and owl scramble confusedly to look for shelter, while the fish and frog hide under the rocks. The rabbit quickly goes back to her warm, calm, and comfortable burrow. It is a portrait of mitigation managed naturally by animals.

In its function as a children's story, the knowledge about this ecological system is exposed in the first level. In the second level, there is a moral message which is implicitly conveyed. Although the rabbit is depicted as a funny main character, she indirectly teaches the importance of self-reflection, instead of complaining over the other animals' virtues. Jealousy drastically changes into a feeling of gratefulness because she witnesses that other animals also have their own disadvantages. When she feels safe and comfortable in her burrow, she finally acknowledges that it is a tremendous luck she was born as a rabbit.

Nature has provided a suitable habitat to each of its inhabitants, including the owl and squirrel whose place is in the big trees with their branches and twigs, fish and frog with water. Exploring the story more deeply, there is a traditional Javanese moral teaching about how all animate creatures and humans in the universe can live in harmony if they show consideration that life should be lived in accordance with the surrounding environment. Correspondingly, the main character, which at the beginning of the story always complains, finally does conform to the nature of being a rabbit. Adaptation towards the environment as experienced by the rabbit, squirrel, owl, fish, and frog demonstrate that they are responsive towards the changing temperature and season as it should be in nature. Furthermore, children also obtain the new experience through the personified character, rabbit, or *truwelu* in the local language. It is very common for the traditional people of Java to call rabbits *marmut*, or marmot, instead *truwelu* of the *leporidae* family which is different from a marmot of the *rodentia* order. The writer's consistency to use the word *truwelu*, supported by the illustration of the rabbit's long ears, is very informative for children to distinguish between *Truwelu* and *marmut*.

### **3.2 Learning about Cycle of Life in Nature in 'Flower, Butterfly, Caterpillar, and Leaf' ('Kembang, Kupu, Uler lan Godong')**

This story opens with the setting of time in a beautiful morning, using quite a few sophisticated poetic devices. It portrays a harmonious life in a garden, where all the animals and plants are greeting each other and having a little chat as they welcome a fresh new day. 'In one wonderful morning, leaves are dancing along with the softly blowing wind. The dew is smiling, showing off its clearness. It reflects the sunlight and the full spectrum of colors ("Sawijining esuk kan endah, gegodhongan jejogedan katiyup angin. Bun esuk mesem pamer beninge. Deweke mantulke sorot srengenge, enggo nuwuhake pecahan werno"). The writer of this story employs technique personification well by giving human qualities to the plant and the animal characters. 'The birds are singing ... butterflies are flying around, saying hello to every flower which they landed on ... and the flowers are nodding because of the breeze'. ("Manuk-manuk pada ngoceh, ... kupu katon gupuh nyambang saben kembang banjur

*menclok ... kembang sing dipanciki mangut-mangut katiup angin*”). The cheery morning is completed by the twittering and chirping of birds, who also play their role in composing marvelous orchestral music.

There comes a butterfly who asks for nectar from the flower. The butterfly insists that the flower has an abundance of nectar that the butterfly needs so much for her life. The interdependent life described in ‘Flower, Butterfly, Caterpillar, and Leaf’ brings children to the process of rationalization because the flower gives the treasure she cherishes to the butterfly. She thinks that she can still live on the remaining stock of nectar because the butterfly promises to only take a sip of it. The plot in this story is elaborated in a linear path by giving a broad space for the main characters of the story: flower, butterfly, egg – caterpillar – cocoon, and leaf. Furthermore, the story tells the flow of the evolution process encountered by different species. Some caterpillars can camouflage themselves, doing mimicry through changing their color into green in order to blend in with the green leaf they are on. The biological development process is also intensively narrated, especially the metamorphosis process of a caterpillar to be a butterfly.

Day by day, the butterfly flies around until the time comes for her to lay her eggs on a leaf. The succession of life’s path of transformation has commenced. The eggs soon grow into caterpillars which are then dependent upon young leaves, just like the butterfly once depended upon the flower. Some of the strong caterpillars are transformed, wrapped inside cocoons. The cocoons hang on the same leaf where the caterpillars once crawled. This incubation period carries on until one day they break apart and butterflies ascend from the cocoon shells, and spread their beautiful wings. The leaf, which hosted the eggs, is consumed by caterpillars, and being hung onto by cocoons, becomes the witness to the cycle of life in nature. The cycle continues as each of the butterflies embarks on their journey to find another flower and to sip its nectar. The flawed leaf feels satisfied for its sacrifice leading to a nourished ecosystem.

*Godhong sing bolong kuwi mesem lan ngiyani kekarepane kupu sing biyen wujud uler. Kupu banjur mabur adoh golek pangan. Godhong bisa nyawang kaendahan saka urip sing piguna lan kebak kabagyan, Wusanane wite si godhong mekar kembange, uga endah nengsemake.*

(The perforated leaf smiles and agrees with the idea of the butterfly which was once a caterpillar herself. She then flutters far away to look for some nectar. The leaf can visualize the beauty of a useful and joyful life. At last, the leaf’s tree blossoms which is beautiful and pleasing to the eyes)

Together with the passing of time, the leaf turns yellow and falls to the ground and fertilizes the soil. The flower turns into fruit which contain seeds, which one day will be the beginning of new

plants. Life is a cycle, an interdependence amongst the various creatures living in nature. The process of taking and giving goes naturally.

The story illustrates how animals and plants live hand-in-hand all the time, if humans are willing to observe and enjoy the mornings, where all signs of life in the universe begin. Cooperative work is beautifully built by plants and animals. They help each other to confirm that they have different functions to sustain their surrounding environment. The poetic devices are used to express the beauty like the dancing leaves and the sun rays casting the rainbow colors – glowing through the morning dew, and the harmonious melody played by the birds are not merely an efficient tool to describe the grand scheme of God's creation. The picture of a wonderful morning does not only evoke children's imagination about the harmony of life but also stimulates their aesthetic sense upon literature as the product of art.

The Javanese used in this story shows the conceptual richness of this particular local language. Identifying colors in Javanese; *abang, dewangga, jingga, kuning, ijo, biru, nila, lan wungu*; illustrate the spectrum of the casting colors of a rainbow. In Indonesian these colors are translated as *merah, oranye, kuning, hijau, biru, and ungu* or in English red, orange, yellow, green, blue, and purple, respectively. However, there is no exact word for *dewangga* both in Indonesian or in English vocabulary. Whereas *nila* is rarely used even though in English it is equal to violet. Through the passage of time, the range of color spectrum referring to *dewangga* is adopted as an Indonesian word but until today it is not very familiar to most native speakers.

### **3.3 Learning about Conflict in Serene Forest in 'The Arrogant Cecen' ('Cecen Sing Gumede')**

'*Cecen Sing Gumede*' voices the human threats happening in a serene forest of Papua, an island of the eastern part of Indonesia. 'The Arrogant *Cecen*' portrays the exotic birds of Indonesia, which are officially listed as rare and protected species, and the other animals which should protect themselves from danger. It is *Cecen*, the nickname of a *Cendrawasih*, or sometimes also known as paradise bird, who is the most wanted by the collectors of rare animals. His beauty is depicted as 'the most' among the birds in the forests of Papua, accentuated by its shining color and smooth silky coat. "*Cecen iku manuk cendrawasih sing paling ayu ing alas Papua. Wulune endah lan alus kaya sutra*". *Cecen* lives together with many kinds of other gorgeous birds, among them are the cockatoo and the parrot (in Indonesian: *kakaktua* and *nuri*). Beyond the family of birds, *Cecen* also makes friends with an ant.

To make the story of 'The Arrogant *Cecen*' likeable and easy to memorize for children, the parrot is named '*Nunu*' and the ant is named '*Mumut*' for *semut*. The shady *matoa* (*pometia pinnata*) tree is a favorite place for *Cecen* to perch, take shelter, and even to eat the sweet fruits as his main

source of food. Because of his relatively big body and his overall appearance that is incredibly interesting, like a man who has many advantages, *Cecen* feels superior and becomes arrogant (in Javanese: *gumede*). But *Cecen* is unaware that when there is an unexpected situation, the way to survive is to communicate and collaborate well with his friends, the fellow dwellers of the forest. As such, the story flows:

*Nalika iku, alas Papua lagi padha ditekani wong bebedhag. Manuk nuri, kakaktua, lan cendrawasih sing lagi dadi buronane. Biasane, sawise entuk buron, manuk-manuk mau banjur diawetake, didadekake pajangan omah.*

(One day, the Papua forest is ambushed by hunters. Parrot, Cockatoo, and *Cendrawasih* are their wanted prey for that day. Usually, after catching these birds, the hunters will kill them, stuff them, and preserve them to sell as home displays)

*Mumut*, who feels indebted to *Cecen* for helping him when he once drifted on the water at the edge of a small lake and almost drowned, tries very hard to inform *Cecen* who is apparently unaware of the arrival of the hunters. *Mumut* climbs to the top of the *Matoa* tree where *Cecen* is drowsing. Due to the height and enormity of the *Matoa* tree, *Mumut* faces a very difficult struggle to reach *Cecen*'s ear. After *Mumut* whispers to *Cecen* about the impending threat towards the birds in the forest, they hastily look for a hole inside the big tree trunk to hide in. The hunters lose track and leave that place empty handed. All the birds are safe, and *Cecen* together with *Mumut* come out from their hiding places. *Cecen* thanks *Mumut* because he has been saved from the grave danger. "*Matur nuwun ya Mut. Nek ora ono kowe aku mesthi wis dibedhil wong-wong iku*". (Thank you so much, *Mut*. Without you, I might already be shot dead by those men).

Besides being introduced to many types of birds and the exotic Papuan forest, children can learn about the ant. As a small animal, which is frequently labelled as weak, ants are actually among the most social of all animals within the genus of insects. The grit and willpower of the ant character, or *Mumut*, to hang on also relates a message that strength is not always associated with physicality, but also mental intelligence within social life. Additionally, the description of the *matoa* tree is a portrayal of a unique plant, which can only thrive in a certain place. This tree becomes somewhat of a representation of protection and nurture to the birds in Papua.

The story gives a traditional teaching about mutual favors and the meaning of harmony which can only be reached when there is a spirit of caring towards others. Not only in the relationship between animals and plants but also between humans and nature bringing about environmental sustainability. The moral ecology-based messages in 'The Arrogant *Cecen*' enlightens the children as readers about the use of ethics in building a relationship with the existing nature. Hunters who seek the

rare protected birds underline how human interference in the forest will lead them to the brink of extinction. Interestingly, although this story uses Javanese language, which of course is the language of the target audience, it also broadens their vision about Indonesia as an archipelago; a country with an abundance of tropical forests where numerous species of plants and animals live.

Harmony is the key word for the healthy ecological system discussed in these three children's eco-literature stories. Living in harmony itself is a fundamental concept for the Javanese way of life, which also embodies cooperation and conformity (Suseno, 1993). These Javanese philosophical principles are reflected by all of the personified characters of the analyzed stories. The understanding about traditional moral guidance in connection with the knowledge of ecology leads children to be aware of the surrounding environment. Similarly, environmentalists who always maintain a mindset of harmony; "... tends to project harmonious, widening circles of concern and involvement from the local to the global eco-critics, to the extent that they favor accounts of timeless experiences of nature" (Heise, in Roos & Hunt, 2010: 253). Whereas according to Murphy (2009), if the love of one's homeland is separated from the existing traditional knowledge, in this case about ecology, the effect will be the loss of the feeling of caring towards nature. In the long term, this condition is predicted to erase the commitment toward the continuation of a healthy environment, the action of ecological restoration, or environmental preservation.

A sense of togetherness, interdependence among the animals and plants to maintain the continuation of the ecological system is detailed in 'Flower, Butterfly, Caterpillar, and Leaf'. Flower shares her priceless wealth, nectar, to the butterfly. As such, Leaf sacrifices a great part of its life not only for animals but also for human life especially in fertilizing the soil. The exposure of the vulnerable creatures like Rabbit and other small animals, in 'It's Better to a Rabbit', who panic when the temperature changes drastically; Caterpillar and Cocoon, in 'Flower, Butterfly, Caterpillar, and Leaf', who very much depend upon Leaf; or the ant – *Mumut*, in 'The Arrogant *Cecen*', whose fighting spirit is far greater than its small body size; can shape children's feelings of empathy. The concepts of adaptation, mutual symbiosis, and the effort to overcome environmental pressures are ecological-moral messages signifying that developing empathy within children towards plants and animals can be catalyzed through the local wisdom-based children stories.

Hunting activities really reflect a destructive conflict between humans and nature. The plot of 'The Arrogant *Cecen*' also traces the conflict by narrating how the hunters' arrival is a doomsday-like incident in a serene forest. In such a chaotic situation, all the animals frantically try to find their own ways to save their lives from the hunters. The moral message conveyed is related to the ethical values

about how humans should treat plants and animals properly because they have a right to live but do not have self-determination upon their own lives. To a large extent, this environmental destruction is one of the global problems. Slash and burn, illegal logging, hunting activities, land-use changes, and other such activities relating to the damage of the environment, according to Castells (2010), resemble a double-edged sword. In one way, the environmental destruction is a part of human behavior. On the other hand, humans can also be a part of the solution. The role of these traditional tales demonstrates that resisting environmental damage or threats can co-exist with concepts that affirm ecological and human values.

Hence, the study about the traditional knowledge on ecology in children's literature can serve as a beginning. The findings lead to a recommendation to encourage giving children eco-literature as early as possible either through reading or listening to the stories. It is a re-rooting movement to revive the oral traditions. Children's eco-literature is likely to be the most appropriate story-telling material that should be introduced to children at the earliest age. This is because story-telling activities and ecological management cover two notions in terms of (1) the intricated interactions between humans and their ecosystem; and (2) the importance of human consciousness to live harmoniously with their surrounding nature. Humans' ability to live in harmony with nature will prompt an awareness about lives that "are linked to even large-scale long-term ecological system" (Brown, 2013). This signifies that through such stories, children will grasp a message that there is an enormous system uniting them with the nature and it is a never-ending cycle.

The knowledge of local wisdom-based ecology can be used as a moral-ethical guidance for Indonesian children to prepare their sense of responsibility towards their future environment. By introducing nature and ecology through children's literature earlier, children are being treated "as agents for change" (Op de Beek, 2018: 73). That is why Steward-Harrawira (in Kwaymullina et.al., 2012) argued that cultural knowledge will be meaningful when it is reconstructed by the owners of the culture. Through children's literature on ecology, the idea of sustaining environmental and cultural awareness can be shared. As Pearson (2011: 212) believed, there will be a "significant impact of early childhood experience upon later growth and development for all children across a range of social-cultural context".

The diversity and uniqueness of plants and animals in the nature-oriented literature which has a foothold in local wisdom, as Murphy confirmed (2009), needs special attention to exist and even thrive as "more-than-human". Accordingly, promoting story-telling activities promoted will likely drive Indonesian children to preserve the environment as a manifestation of nationalism. In the future, the

children of Indonesia should act and behave based on their acquired experiences and knowledge about traditional ecology.

#### **4. Conclusion**

The three exemplified children's literature stories in this study deliver two main aspects of the literary message in connection with traditional knowledge of ecology. First, children can learn ecological systems through the depiction of the nature of Indonesia: various species of animals and plants, the existing dry and rainy season, and how the animals and plants live in accordance with their habitats. They get the precise information about natural Indonesian phenomena as a country within a tropical environment. The lives of animals and plants are very much affected by water and sun. The abundance of sunshine supports the process of photosynthesis and also fertilizes the various types of Indonesian flora and fauna. Second, the stories using Javanese language, of course, accentuate local wisdom with plenty of moral messages. The introduction of various new terms to children, whose native language is Javanese, not only opens their mind to particular ethnic language terms and phrases but also enriches their Indonesian language vocabulary. The experiences obtained by children about ecological systems from local knowledge will, subsequently, evoke a sense of personal ownership for the ecology of Indonesia, and globally. As a result, Indonesian children will highly appreciate the diversity and uniqueness of Indonesian nature and its cultural expression.

Since traditional knowledge about ecology will last for a long time and always provide space for new experiences and situations when the given meaning of the story is understood, the local concepts can be used as a reference for preschool-age and elementary school-age children as an early basis of their 'Indonesianess'. These types of stories and story-telling are appropriate material to build the Indonesian character of children because the message is not merely a tool to convey culturally moral-ethical guidance: how to behave towards nature; but becomes a meeting point for fulfilling curiosity, national pride, environmental care, and taking responsibility to sustain the environment as well. It is the intersection between traditional knowledge and character-building oriented education. Additionally, to answer the concept of globalization which tends to disparage traditional values; without exception in the awareness of environment; this research will be continued as a representation of the bridge between local and global.

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