

# **Critical Analysis of “Sustainability” in Korean Early Childhood Curriculum from Posthuman Perspectives**

**Hyunsun Suh<sup>1)</sup>**

Sungshin Women’s University

## **Abstract**

This study analyzed how the recently revised Korean early childhood curriculum describes and discusses sustainability through a critical perspective using posthumanism to destabilize anthropocentric thinking and expand the concept of sustainability. The notion of sustainability described in the General Guidelines and Commentaries of the Korean Early Childhood Curriculum reveal limitations and the potential of the ontological, epistemological, and ethical foundations which serve as the basis of early childhood education. While sustainability was expressed as a new value from which the curriculum stems, it was presented as traditional nature, resource conservation, and raising animals and plants based on human-centered thinking written as educational content. However, through the vision of an educated person of the curriculum, children were found to be relational beings, and in everyday encounters they influenced and interacted with various more-than-human others; there was room for the interpretation that not only children but also other beings exert agency. We live entangled with multiple species. This implies that early childhood pedagogy has the potential to broaden understanding and practice and generate vigorous debate on sustainability.

**Keywords** : sustainability, early childhood curriculum, posthumanism, anthropocentric thinking

---

Corresponding author, <sup>1)</sup> [hssuh@sungshin.ac.kr](mailto:hssuh@sungshin.ac.kr)

## Introduction

Each country's curriculum affects other countries' curricula, whether intentionally or unintentionally. Governments consider other countries' curricula when writing new plans to boost international competitiveness (Adamson & Morris, 2007). Additionally, scholars are clarifying the limitations of the current curriculum and suggesting changes using other countries' curricula as examples. International organizations, such as the Organisation for Economic Co-operation and Development (OECD), analyze the values of each country's curriculum, examine trends in change, and compile lessons learned from each country's attempts and failures to create a more just and better society (OECD, 2021). Considering the mutual relationship of curricula, it is necessary to analyze and share curricula to improve education and create an active global forum.

Recently, the national early childhood education curriculum in Korea has been extensively revised to shift from teacher-centered education (Ministry of Education & Ministry of Health and Welfare, 2020). First, the government did not develop teachers' guidebooks; these had been criticized for promoting teacher-centered education by providing detailed descriptions of education plans. Second, the 365 detailed learning contents presented in the previous curriculum were simplified into 59 learning contents regardless of age. This is due to concerns that classification by age can artificially limit what young children should experience. The revised curriculum emphasizes that teachers should pay more attention to children's play and provide educational support for children's interests (Ministry of Education & Ministry of Health and Welfare, 2020). As such, the revision of the curriculum focuses on going beyond teacher-centered education; thus, it is necessary to examine values, such as sustainability, which remain in the curriculum. Since the researchers of the revised curriculum revealed that they reviewed the United Nation's (UN) sustainable development goals (KICCE, 2019), the revised curriculum is expected to contain elements related to sustainability.

Sustainability is a concept everyone engages with daily and one used in various academic fields, such as science, business, and politics. However, sustainability remains an ambiguous and contentious concept (Purvis et al., 2019; Woollorton, 2012). There is no agreed-upon definition of sustainability (Weldemariam et al., 2017). Sustainability was publicized in the

international community after its discussion in a 1987 UN report titled "Our Common Future," known as the Brundtland Report after the chairman of the World Commission on Environment and Development (WCED). In the late 20th century, when countries around the world were focusing on their economic development, the article was a reminder that economic development and environmental issues should be integrated and approached through sustainability (UN, 2022). While sustainability is presently described as having three pillars—social, economic, and environmental—the UN continues to pursue the harmony economic growth as a solution to ecological problems (Purvis et al., 2019). However, there is criticism that sustainability and development are concepts that can never be fused.

Currently, the world is facing ecological crises. Anthropocentric thinking-based actions, including a high dependence on fossil fuels and an excessive use of pesticides, have led to critical issues, such as climate change, unexpected loss of species diversity, and species extinction (Steffen et al., 2007; United Nations Environment Programme, 2010; van Dooren, 2016). Crutzen (2002) drew academic attention by synthesizing "anthropo," meaning mankind, and "cene," meaning a new geological age, calling the era of change caused by mankind the Anthropocene. The Anthropocene refers to a new geological age in which the Earth's system has been fundamentally altered by human beings' extractive and consumptive activities, which have accelerated over the last three centuries (Crutzen, 2002). To avoid such anthropocentric thinking and actions, there is a consensus that our worldview should be changed and that a transformative change is necessary in education. In the field of education, which has traditionally been based on humanism, the Anthropocene is requesting a challenging thought.

Posthumanism seeks to move beyond human-centered thinking and actions to overcome the limits of humanism. Posthumanism, beyond human exceptionalism, shows that human beings are not the only beings with agency, which has been taken for granted. Under humanism, if agency is something that only humans have, in the posthuman perspective, agency is an enactment, such as the complex networking between humans and non-human beings (Jackson & Mazzei, 2012). This world is not just for humans, it is a "common world" in which multiple species, such as ants, earthworms, raccoons, trees, and fungi, live entangled (Taylor & Giugni, 2012; Taylor & Pacini-Ketchabaw, 2015; Taylor et al., 2021). Posthumanism criticizes the human exceptionalism that stems from humanism and views the

relationship between the world's human and non-human beings from a new perspective.

The posthumanist perspective poses a problem with the traditional core beliefs of early childhood education in two parts. First, in historically western early childhood education, there is a discourse that nature and culture are separate. Rousseau, a representative western educational thinker of the 18<sup>th</sup> century, argued in his book *Émile* that “everything coming from nature is good and everything coming from humans is corrupt (Rousseau, 1762, as cited in Taylor, 2011).” This idea has functioned as the foundation of the nature/culture dualism discourse in early childhood pedagogy (Taylor, 2017a, 2017b). Society and nature, and humans and nature, are assumed as separable; such dichotomous thinking puts humans higher than nature, rather than seeing humans and nature as co-inhabiting entities. Posthumanism rejects the dualism that inevitably creates hierarchies and views the relationship between humans and nature from a new perspective. Second, the posthuman perspective calls for a critical look at child-centered education, which has long been the emphasis of early childhood education. Young children are not the center of the world; they are a part of it. Young children are relational beings rather than independent beings. Therefore, this change in ontology surrounding young children requires a change in the epistemology of learning.

Furthermore, to challenge and broaden the perspective of sustainability, there has been a recent highlight on the need for posthuman discussion (Somerville & Williams, 2015; Weldemariam, 2017). This provides an impetus for rethinking the ontological, epistemological, and ethical dimensions that underpin sustainability in early childhood education (Weldemariam, 2017; Weldemariam et al., 2017). With regard to the early childhood field, sustainability has been discussed and understood by combining various terms and concepts, such as nature education, environmental education, sustainable development education, and education for sustainability, using human-centered thinking. Since there is no active debate between sustainable development and environmental education, early childhood education on sustainability in Korea is not recognized as a new educational issue for early childhood educators and is simply understood as an altered name for environmental education.

Studies on early childhood curricula have analyzed sustainability-related concepts through comparative analyses. Ärlemalm-Hagsér and Davis (2014) conducted a comparative analysis on the early childhood curriculum in Australia and Sweden; Weldemariam et al. (2017) on

the early childhood curriculum in Australia, the United Kingdom, Norway, Sweden, and the United States; and Li et al. (2019) on the early childhood curriculum in China and Norway. Although such studies indicate that sustainability issues have become more prominent, a common definition for sustainability does not exist. These researchers attempted to explore sustainability-related research and practices by identifying the characteristics and limitations of each country’s curriculum through such comparisons.

A Curriculum analysis identifies the blind spots, biases, and perceptions (Jansen & Reddy, 1994) of sustainability in the curriculum. The national curriculum continuously contributes to setting the direction of research and practice in early childhood pedagogy (Somerville & Williams, 2015). For instance, Te Whāriki (Ministry of Education, 1996, 2017), the national-level curriculum of New Zealand, has emphasized “responsive and reciprocal relationships with people, places, and things” as an important principle of the curriculum for the last two decades. According to trend research on sustainability (Malone et al., 2020), there is an increasing number of studies suggesting an expansion of the meaning of sustainability by focusing on the posthuman pedagogy in the New Zealand curriculum. In contrast, American preschool teachers reported that the academic curriculum was a barrier to practicing sustainability with children in daily life (Ginsburg & Audley, 2020).

This study aimed to critically examine whether and how sustainability is described and discussed in the recently revised Korean early childhood education curriculum through posthuman perspectives. Korea attempted to completely revise the national early childhood curriculum in 2019. The former version of the curriculum received many criticisms pertaining to sustainability (Ji, 2019; Lee, 2019). For instance, there was a difference between the views of nature as written in the General Guidelines versus explanations in the same curriculum. During the revision, the curricula of other countries were reviewed, along with efforts to incorporate the values agreed upon by international trends. It is expected that substantial changes have been made in the examination of sustainability and sustainability-related content in this revised curriculum. This study will catalyze early childhood teachers and researchers to actively discuss the limitations of anthropocentric thinking and alternatives. Further, this study provides ideas for future sustainability-related research and implementation as well as a vision for national-level curricula for countries including Korea.

Research Question: How is sustainability described and discussed in the 2019 Korean

Early Childhood Curriculum?

## **Literature Review**

### **Sustainable Development Education in Early Childhood Education**

Following the 1987 Brundtland report, sustainable development was discussed in the United Nations Conference on Environment and Development (UNCED), which was held in Rio de Janeiro, Brazil, in 1992. Agenda 21, a comprehensive plan of action for sustainable development, was subsequently announced. A recommendation was made with regard to paying attention to unsustainable production and consumption patterns as follows: “Special attention should be paid to the demand for natural resources generated by unsustainable consumption and to the efficient use of those resources consistent to minimize depletion and reduce pollution” (UN, 1992, p. 18). This is related to the traditional Korean thinking that nature and resources should be conserved; it has not led to active discussion but has rather been recognized as a resource-saving activity in early childhood environmental education.

In 2005, the UN announced the United Nations Decade of Education for Sustainable Development, emphasizing the importance of education above all for sustainable development. It highlighted that all aspects of education should incorporate the principles, values, and practices of sustainable development. The 10-year report evaluated that sustainability has to be encompassed in all school-level curricula and a shared understanding should exist so that early childhood pedagogy can become the foundation for sustainable development (UNESCO, 2014). Although there are studies related to sustainable development education or education for sustainability in early childhood pedagogy, the number of studies is limited in each country (Davis & Elliott, 2014; Duhn, 2012; Somerville & Williams, 2015). In Korea, in the 2015 revised elementary and secondary school curriculum, “Environmental and Sustainable Development Education” was indicated as a cross-curricular theme; sustainable development education had become equivalent to environmental education (even this reference was deleted in the early childhood curriculum).

### **Background of the Revised Korean Early Childhood Curriculum (Nuri Curriculum)**

In 2019, Korea revised and announced the national-level early childhood curriculum. Kindergartens in Korea are under the Ministry of Education and are in charge of children aged 3–5 years. The Ministry of Health and Welfare is in charge of preschools operated for children aged 0–5 years. Since these institutions involve children of the same age (3–5 years), there were concerns that the quality of education may differ depending on the type of institution. To strengthen the national responsibility for early childhood education, in July 2012, the government announced a common national curriculum for children aged 3–5 years attending kindergartens and preschools.

This curriculum is called the Nuri Curriculum—the name was selected through a public name contest. “Nuri” is a Korean word with two meanings: “the world” and “deserving good life.” The Nuri Curriculum is a high-quality curriculum that ensures fair educational opportunities so that all children can achieve their dreams (Jo, 2011). Since 2012, the early childhood curriculum has been officially called the Nuri Curriculum. After the 2019 revision, it is called the 2019 revised Nuri Curriculum (in this study, when the two curriculums are differentiated, they are indicated as the 2012 Nuri Curriculum and the 2019 Nuri Curriculum).

This revision was based on the 2017 “Innovation Plan for Early Childhood Education” to realize national tasks along with the start of the new government’s term; the revised curriculum indicates a “reorganized curriculum focusing on children’s play” (Ministry of Education & Ministry of Health and Welfare, 2020). This revision is in line with the 2015 elementary and secondary school curriculum announced earlier and the advocated learner-oriented education. However, since the national kindergarten curriculum was first enacted in 1969 and early childhood education has advocated child- and play-centered curriculum, there have been concerns and criticisms about the expression of educational innovation. This controversy over the expression “education innovation” can be considered a limitation as there was insufficient deliberation during the revision of the Nuri Curriculum.

The 2019 Nuri Curriculum simplified the 369 learning contents of the 2012 Nuri Curriculum to a total of 59 learning contents and has made no distinction of content within the 3–5 years age group, contrary to the previous approach of categorization within the age group (Ministry of Education & Ministry of Health and Welfare, 2020). Through this process,

the teachers were no longer required to teach excessive content, and they operated the Nuri Curriculum by autonomously documentation the content and support children's play (Ministry of Education & Ministry of Health and Welfare, 2020).

## **Method**

### **Curriculum Analysis**

The Korean Early Childhood Curriculum (i.e., Nuri Curriculum), which was recently revised and announced by the Ministry of Education & the Ministry of Health and Welfare, is a highly simplified document of 14 pages. The Ministry of Education & Ministry of Health and Welfare developed the information package explaining the contents of the Nuri Curriculum as being based on the purposes of the revised version through the "2019 Revised Nuri Curriculum Guide."

The guide can be divided into two main parts. The first part of the guide is called "General Guidelines." The General Guidelines present the direction of the Nuri Curriculum as a national-level curriculum and explain operations of the Nuri curriculum, such as teaching and learning, and evaluation. After suggesting direction via the General Guidelines, there are explanations of each goal and content in five major areas (i.e., physical exercise & health, communication, social relations, art experience, and nature exploration). According to a study that analyzed the view of nature in the early childhood curriculum before the revision in Korea (Lee, 2019), there were differences among the views of nature established in the General Guidelines, explanations, and the description of the appropriateness of the nature-related education. This suggests that the present analysis of the revised Nuri Curriculum should also consider whether there is any difference between the General Guidelines and each area's explanation. Therefore, this study attempted to analyze sustainability-related concepts from posthuman points of view, and the analysis results were described by dividing them into General Guidelines and explanations.

This study explored the characteristics of the Korean curriculum while referring to the analysis themes of previous studies. The two previous comparative studies of curricula

maintained a critical perspective: Ärlemalm-Hagsér and Davis (2014) focused on children’s rights, and Weldemariam et al. (2017) focused on the posthuman framework. While not a curriculum analysis study, Somerville & Williams (2015) classified the sustainability-related studies in early childhood pedagogy into three categories: connection to nature, children’s rights, and posthuman framework. The recently revised Korean early childhood curriculum advocates a child-centered curriculum and emphasizes children’s rights. Nevertheless, it is necessary to adopt the new perspective of a posthuman framework to recognize the limits of, and expand, sustainability-related concepts. Inspired by these studies, this study examined the concept of sustainability as expressed explicitly and implicitly in the General Guidelines and explanations of the guide and discussed the necessity of expanding education for sustainability in early childhood pedagogy (see. Table 1).

Table 1. *Structure of the 2019 Revised Nuri Curriculum Guide*

| General Guidelines           | Areas with Commentary        |
|------------------------------|------------------------------|
| Purpose of Revision          | Physical Exercise and Health |
| Vision of an Educated Person | Communication                |
| Purposes and Aims            | Social Relations             |
| Teaching and Learning        | Art Experience               |
| Evaluation                   | Nature Exploration           |

## Results

### Sustainability’s Presence in Curriculum

#### *Sustainability: For the Future, not Now*

The 2019 Nuri Curriculum mentions the concept of sustainability. Although the curriculum does not explicitly use the word “sustainability,” it does use the term “sustainable society” a few times. This implies the concept of “sustainability.” The General Guidelines of the first half of the curriculum present the purpose of the revised Nuri Curriculum and describe sustainability as follows:

General Guideline: Purpose of Revision

The recent curriculum in Korea and other countries is created in such a way that it responds to the

needs of the future society based on competency. The future society requires personnel who can utilize knowledge well, rather than knowledgeable personnel. Furthermore, the future society needs personnel with good personalities, to live together with others by respecting nature and life, and have the capacity to create a sustainable society through creative thinking. (Ministry of Education & Ministry of Health and Welfare, 2020, p. 12)

This revision of the curriculum is the result of awareness toward the importance of human resources for a sustainable future society offering corresponding changes in education. The 2019 Nuri Curriculum presents talent in a future society as using knowledge well rather than possessing a lot of knowledge. UNESCO (2014) requested a change in the educational paradigm for a “more just, peaceful, tolerant, inclusive, secure and sustainable” world. This indicates that the international community has agreed upon the need for educational change focusing on a curriculum in which one can analyze and solve problems using critical thinking, realizing interconnectedness, and escaping from traditional knowledge-centered education to seek solutions to global issues in the economic, social, cultural, and environmental fields in the 21st century (Asia-Pacific Centre of Education for International Understanding, 2015). In the General Guidelines, sustainability serves to strengthen the legitimacy of educational changes.

### ***Limitations of Discussing Sustainability from Human-Centered Thinking***

The Curriculum Guide mentions sustainability by area. For example, the area of nature exploration aims to let children “enjoy the process of exploration and possess an attitude of living together with nature,” and consists of sub-areas such as “enjoying the exploration process,” “exploring in life,” and “Living together with nature.” Among them, the newly organized sub-area “Living together with nature” mentions sustainability.

#### **Commentary on Area of Nature Exploration**

“Living together with nature” is a newly organized sub-area indicating that children experience the preciousness of life and the natural environment. “Cultivating the habit of conserving nature and resources,” which is in the area of social relations, and “finding out about living organisms and the natural environment” and “finding out about natural phenomena,” which are in the area of nature exploration, were developed in the previous Nuri Curriculum. They comprise content that forms attitudes for a sustainable society. (Ministry of Education & Ministry of Health and Welfare, 2020,

p. 103)

Thus, "Living together with nature" can be seen as a reorganized sub-area rather than a new area. This is because the 2012 Nuri Curriculum synthesized the learning contents of the social relations and nature exploration areas. "Cultivating the habit of saving nature and resources" is part of traditional education concerning "nature protection" and "resource conservation," which was presented as a social value in the previous curriculum. Nature and resources are listed in parallel, and the act of conserving nature is interpreted the same as the act of conserving resources. Expressly, this expression suggests nature is utilized by humans rather than beings living together with humans. The contents "finding out about organisms and the natural environment" and "finding out about natural phenomena" brought from the area of nature exploration in the previous curriculum do not view the beings other than humans as living beings, reflecting an objectified view that non-human beings must be discovered by humans.

In the 2019 Nuri Curriculum, "Living together with nature" is emphasized from a structural point of view by grouping the lessons at the lower level of the previous curriculum into one sub-area, which is a higher category, and naming it "Living together with nature." Nonetheless, it exposes the limits to which the discussion of sustainability education can be expanded beyond the traditional environmental preservation and resource conservation perspectives. It is difficult to say that one can live together with more-than-human beings, including animals and plants, merely based on an intellectual knowledge of living organisms, the natural environment, and natural phenomena. The commentary in the area of nature exploration can create a misunderstanding that it is possible to form an attitude toward a sustainable society by integrating the dimensions of resource conservation and intellectual knowledge.

### **The Confused Views of Children in Curriculum**

#### ***Children Living Together with Non-human Beings***

From a posthuman perspective, humans, including children, are not the only actors. In addition to humans, animals, plants, microorganisms, and materials are intricately entangled

with humans affecting their agency. The world we live in is a common world of multiple species, and humans are a part of it. To challenge and expand the concept of sustainability, it is necessary to understand the view of the child as indicated in the curriculum. The corresponding part that needs to be examined is the vision of an educated person in the General Guidelines and the nature exploration commentary.

The 2019 Nuri Curriculum presented the vision of an educated person pursued by the curriculum, which were not in the 2012 Nuri Curriculum. Desired human characteristics of the vision of an educated person is an educational common vision that all school-level curricula in Korea should pursue (Ministry of Education & Ministry of Health and Welfare, 2020). The desired human characteristics are linked to the elementary and secondary school curriculum, presenting healthy, independent, creative, and emotional people and people living together. The Guidelines state that desired human characteristics of the vision of an educated person are apparent in the current state of children playing and learning in daily life, and these characteristics should be developed in the future (Ministry of Education & Ministry of Health and Welfare, 2020, p. 28). Although the five human characteristics do not appear separately, the aspect that deserves special attention in terms of sustainability is “people living together.”

General Guideline: The Vision of an Educated Person

People Living Together: People living together are democratic citizens who have a sense of belonging to the society they are part of, respect other people and lives, live together with nature, have an interest in social issues, and cooperate with others to create a better society. **Children are highly sensitive to all life including those who are around them, and actively learn social order and ways of communicating while building relationships with people closest to them and the world around them.** The revised Nuri Curriculum helps children grow up to be people who care about and cherish their families, neighbors, animals, plants, and the surrounding environment, and who have a caring mind, attitude, and sense of responsibility. (Ministry of Education & Ministry of Health and Welfare, 2020, p. 30)

“People living together” is the aspect that represents children as relational beings. The desired human characteristics in the General Guidelines suggest children are highly sensitive to all living organisms, not only people, and can learn communication while building

relationships with them, along with ecological sensitivity. Since communication and relationships are inherently two-way, it indicates that children should communicate with and relate to not only humans, but also animals, plants, and the environment in their daily life; this requires thinking and actions far beyond a human-centered perspective. "People living together" indicates that children are not independent beings but a part of the world. Therefore, there are possibilities for new educational approaches focused on ethics for living with entangled beings, beyond predetermined knowledge-based learning and anthropocentric actions.

### **Children are the Protagonist and Nature is the Object**

The view of children as relational beings described in the first half of the curriculum does not designate a view of children in the rest of the curriculum in which the five areas are described. The view of the child described in the commentary on nature exploration reveals its limitations if examined from a critical posthumanist perspective.

#### **Commentary on Area of Nature Exploration**

"Hey! Bees are here." Children are curious scientists. They enjoy exploring and actively searching for answers to their questions. The area of nature exploration is related to various experiences in which children mathematically and scientifically explore the characteristics and changes of materials, objects, natural phenomena, animals, and plants. (Ministry of Education & Ministry of Health and Welfare, 2020, p. 101).

Nature exploration describes children as curious scientists and active explorers. Children's inquisitive actions are considered innocent and meaningful learning. Animals and plants become objects to be explored mathematically and scientifically, rather than subjects who have the agency to communicate and establish a relationship for living together.

When we delved into the parts that mentioned nature in the 2019 Nuri Curriculum, we could only find corresponding contents in the art experience and nature exploration areas, as shown in Table 2. Even in the area of social relations, which covers sub-areas such as "Living together" and "having an interest in society," nature is not mentioned. It can be seen that only family, friends, and adults are mentioned as living together with children in the social

relations area, and non-human beings, such as insects, animals, and plants, were not considered.

Table 2. *Contents by Area*

| Area               | Sub-area                         | Area Purposes                                                         | Contents                                                         |
|--------------------|----------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------|
| Social relations   | Living together                  | Get along well with others                                            | Knowing the meaning of family and living in harmony              |
|                    |                                  |                                                                       | Helping each other and getting along with friends                |
|                    |                                  |                                                                       | To resolve conflicts with friends in a positive way              |
|                    |                                  |                                                                       | Respecting different feelings, thoughts, and actions             |
|                    |                                  |                                                                       | Being polite to friends and adults                               |
|                    |                                  |                                                                       | Recognizing the necessity of promises and rules and keeping them |
|                    | Having an interest in society    | Have an interest in the society and various cultures in which we live | Asking questions about where I live                              |
|                    |                                  |                                                                       | Taking pride in Korea                                            |
|                    |                                  |                                                                       | Having an interest in various cultures                           |
| Art experience     | Attempting to find beauty        | Feel and enjoy the beauty in nature and living                        | Feeling and enjoying the beauty in nature and living             |
|                    |                                  |                                                                       | Taking an interest in and looking for artistic elements          |
| Nature exploration | Enjoying the exploration process | Enjoy the exploration process with curiosity                          | Having a constant curiosity about the world and nature around us |
|                    |                                  |                                                                       | Enjoying participating in the process of exploring questions     |
|                    |                                  |                                                                       | Having an interest in different ideas in the exploration process |
|                    | Living together with nature      | Respect life and nature                                               | Paying attention to the animals around us                        |
|                    |                                  |                                                                       | Valuing life and the natural environment                         |
|                    |                                  |                                                                       | Relating changes in weather and seasons to living                |

The nature described in the art experience area is what children consider beautiful and the space in which they experience pleasure. In the area of nature exploration, nature is mentioned in "enjoying the exploration process" and "living with nature." In the sub-area "enjoying the exploration process," nature and the children's surrounding environment are the objects children should continuously be curious about; the surrounding environment and nature are classified drawing a distinction between the surrounding environment and nature, and children and nature.

### **Implications of the Importance of Life and Learning with Non-human Beings**

There is a gap that can create a new meaning of sustainability by challenging the meanings of sustainability. The content of "Living together with nature" in the curriculum suggests uncritically raising animals and plants in the classroom, which has traditionally been viewed as a positive activity. However, it suggests that everyday encounters with non-human beings should also be given attention. In daily life, children and educators encounter not only diverse animals like birds and dogs but also small insects, such as ants and bees, and wounded plants. In the field of early childhood education, strategic attention should be paid to the seemingly insignificant, ordinary daily encounters, to address the ethical questions posed in the Anthropocene (Atkinson, 2015; Nxumalo, 2016; Rooney, 2019; Taylor & Giugni, 2012; Taylor & Pacini-Ketchabaw, 2015).

#### **Living together with nature**

##### **1. Paying attention to the animals and plants around us**

This is a lesson in which children's interest is developed by encouraging them to explore the characteristics of animals and plants by observing or cultivating animals or plants encountered while traveling to and from kindergarten or child care centers and homes, and outdoor playgrounds and classrooms.

##### **2. Valuing life and the natural environment**

This is about children who are interested in not only animals and plants, but also the environment around them, cherishing living things.

(Ministry of Education & Ministry of Health and Welfare, 2020, p. 108)

The above description brings attention to encounters between children and animals and plants. It asks teachers to focus on relationships rather than individuals. It shows children interacting with nature by touching and responding ethically. When we simultaneously consider the agencies, such as animals, plants, objects, and materials that influence children, we can explore more diverse relationships, respond, and learn in new ways (Bennet, 2010; Sellers, 2013). Through everyday encounters with more-than-humans, children can realize their belonging to the common world, where multiple species live collectively.

## **Discussion**

This study analyzed how the recently revised 2019 Nuri Curriculum of Korea describes and discusses sustainability through a critical perspective using posthumanism to destabilize anthropocentric thinking and expand the concept of sustainability in early childhood education.

The Korean curriculum guide mentions the concept of sustainability in a similar context to the Australian early childhood curriculum (Ärlemalm-Hagsér & Davis, 2014). In the General Guidelines, there was an attempt to broaden and diversify the perspective of the world through the value of sustainability, leaving room for new insights into life, such as the relationship between humans and more-than-human others and what is meaningful knowledge. However, in the process of expressing these values in the learning areas of the curriculum, there was a simplified explanation on creating basic living habits and acquiring scientific knowledge (e.g., cultivating the habit of conserving nature and resources and finding out about living organisms and natural environment). If sustainability is described only in a specific area of the curriculum, such as the area of nature exploration, improvements should be made via revisions in the future. To this end, if the research teams for the General Guidelines and five learning areas are assembled differently, it should remain possible to pursue the same direction and depths of content via continuous discussion.

The curriculum should present the foundation of the educational philosophy. When epistemology, ontology, and value theory flow consistently in the curriculum, teachers can broaden their views and develop educational imagination and insight and make educational

judgments in various unpredictable encounters with children and non-human beings. In addition, educators should be encouraged to think in terms of epistemology, ontology, and ethical foundations to broaden the meaning of sustainability, rather than limiting sustainability to future problems. In New Zealand's curriculum, there are four principles, Empowerment, Holistic Development, Family and Community, and Relationships, which indicate the basis for decision-making regarding the curriculum and guide educational practice processes (Ministry of Education, 2017, p. 16). It describes children's learning in the five areas of wellbeing, belonging, contribution, communication, and exploration. Unlike the subject-matter names of the five areas of the Korean curriculum, New Zealand's curriculum reflects the value and core competencies of education. In addition, learning outcomes that are comparable to Korean learning contents are described for layered interpretation. For instance, the connection area's learning outcome regarding sustainability is indicated as follows: "Over time and with guidance and encouragement, children become increasingly capable of making connections between people, places, and things in their world" (Ministry of Education, 2017, p. 24). In the Korean curriculum, the sustainability-related contents, such as valuing life and the natural environment, are indicated in a limited way through children's interests and actions. Since the innovation of early childhood education was advocated through the 2019 revised Nuri Curriculum, we should pose questions to the anthropocentric learning about nature that has been taken-for-granted and experiment with new ways of learning together with nature.

Criticism of the Anthropocene from the posthuman philosophy lens evokes new ways of thinking about "living together" and questions the sustainability of human-centered thinking by revealing the limitations of taken-for-granted educational assumptions. We should rethink notions of "children as curious scientists" and learning to live together with diverse beings that are often taken-for-granted. van Manen (2016) questioned whether children's curiosities were unconditionally good. Among the children who often collect and classify insects owing to their curiosity, some do not hesitate to kill insects they find in their backyard. They are curious about insects, but the curiosity is shallow: they pay attention to how many legs insects have, how many times they metamorphose, and how strong they are. Such curiosity can be easily ignored and replaced by other attractive curiosities. In the daily life of children, animals and plants are dying or witnessing death (Ministry of Education & Ministry of Health and

Welfare, 2020; Nxumalo, 2018; Taylor & Pacini-Ketchabaw, 2017). Children and teachers need to learn through everyday encounters is more than just scientific knowledge, and teachers need to support more than just the curiosity of children. Rather than trying to connect children's curiosity with pleasant emotions, we should allow more diverse stories relevant to children, animals, plants, and teachers in the Anthropocene. Children, who are relational beings and posthumans (Murrells, 2016), are more interested in the stories of life in the common world than adults.

To broaden the discussion of sustainability, ontological and epistemological transitions are required. The 2019 revised Nuri Curriculum has left room for interpretation from a posthuman perspective, showing children as relational beings through the desired human characteristics. This indicates the possibility of a paradigm shift from human exceptionalism to the pedagogical idea of humans and more-than-human others living entangled lives. The paradigm shift, which moves beyond the view that humans are saviors, does not mean that children and teachers have to find great solutions for huge environmental problems that cannot be solved with current scientific knowledge, or that children should solve and take responsibility for such issues. Rather, that they should be attentive to encounters with more-than-human others in their daily lives.

Scientific knowledge is not unnecessary or inevitably wrong (Nxumalo, 2018), however, it should not be the only means to know more-than-human others. Children are beings of the common world in which there are other species, and they continue learning through the mutual influence of these species every day (Pacini-Ketchabaw & Nxumalo, 2015; Taylor & Giugni, 2012; Taylor & Pacini-Ketchabaw, 2015). As early childhood educators, we need to move beyond individual child-centered pedagogies and view the world from a different perspective. Though children are relational beings and actively influence each other more than human beings, if teachers cannot see this, it will limit children's learning about how to live together and respond in more ethical ways.

The curriculum can continuously provoke questions, conversations, and new thinking, and vice versa. There is no correct answer or fixed solution to conclude the Anthropocene. According to Nxumalo (2018), engaging with and responding to the more-than-human worlds is related to "always-in-process rethinking and rearticulation of practice." With regard to the 2019 Nuri Curriculum, we should consider whether children and teachers have learned

to value life or have learned to ignore it. It is necessary to embrace the common world pedagogies so that we can view the world in a perspective open to more-than-human beings, moving away from the human-nature dichotomy and the assumption that children are innocent and naive beings. This will be an impetus to challenge and expand sustainability.

The 2019 Nuri Curriculum has two sides: expanding and limiting the discussion in the field regarding sustainability. The anthropocentric perspectives and learning used in the curriculum limit the discussion by trivializing the relationships among all beings of the common world and not moving beyond human-centered sustainability. However, expanding the discussion by focusing on encountering every day with other species will help raise early childhood educators' awareness of problems and lead active discussions in early childhood pedagogies by creating more diverse viewpoints and issues. Compared to other elementary and secondary education, early childhood pedagogies have a relatively open and flexible curriculum (Weldemariam, 2017). Children are relational beings and sensitive to other beings. Early childhood pedagogies have numerous possibilities: the ontological and epistemological challenges can truly make room for living together beyond the intellectual dimension. Follow-up studies need to pay attention to teachers' interpretations of sustainability in the curriculum and whether they expand the meaning of sustainability with children and non-human beings through everyday encounters, thus providing opportunities to expand perspectives.

## References

- Adamson, B., & Morris, P. (2007). Comparing curricula. In M. Bray, B. Adamson, & M. Mason (Eds.), *Comparative Education Research* (pp. 263-282). Springer.
- Ärlemalm-Hagsér, E., & Davis, J. (2014). Examining the rhetoric: A comparison of how sustainability and young children's participation and agency are framed in Australian and Swedish early childhood education curricula. *Contemporary Issues in Early Childhood*, 15(3), 231–244. <https://doi.org/10.2304%2Fciec.2014.15.3.231>
- Asia-Pacific Centre of Education for International Understanding (2015). *Global citizenship education promotion plan in the SDGs Era*. <http://www.unescoapceiu.org/>

- Atkinson, K. (2015). Wasps-bees-mushrooms-children: Reimagining multispecies relations in early childhood pedagogies. *Canadian Children*, 40(2), 67–79.  
<https://doi.org/10.18357/jcs.v40i2.15180>
- Bennett, J. (2010). *Vibrant matter: A political ecology of things*. Duke University Press.
- Crutzen, P. (2002). Geology of mankind. *Nature*, 415(6867), 23.  
<https://doi.org/10.1038/415023a>
- Davis, J., & Elliott, S. (Eds.). (2014). *Research in early childhood education for sustainability: International perspectives and provocations*. Routledge.
- Duhn, I. (2012). Making ‘place’ for ecological sustainability in early childhood education. *Environmental Education Research*, 18(1), 19–29.  
<https://doi.org/10.1080/13504622.2011.572162>
- Ginsburg, J., & Audley, S. (2020). “You don’t wanna teach little kids about climate change: Beliefs and barriers to sustainability education in early childhood. *International Journal of Early Childhood Environmental Education*, 7(3), 42–61.  
<https://eric.ed.gov/?id=EJ1264526>
- Jackson, A., & Mazzei, L. (2012). *Thinking with theory in qualitative research*. Routledge.
- Jansen, J., & Reddy, V. (1994). *Curriculum analysis*. The Association of Canadian Community Colleges. <https://sites.pitt.edu/~ginie/ieq/pdf/curranal.pdf>
- Ji, O. (2019). Jisogganeungbalieon gwanjeom-eseo jomanghan nuligwajeong-ui munjejeom mich gaeseonbang-an-e daehan tamsaegjeog gochal [An exploratory study on the problems and improvement approach concerning Nuri curriculum for the perspective of sustainable development]. *Early Childhood Education Research*, 39(2), 213–233.  
<https://doi.org/10.18023/kjece.2019.39.2.009>
- Jo, B. (2011). Man 5se gongtong-gwajeong-eulo boyug-gyoyugui seonjinhwaga ilueokigil [May the advancement of childcare and education be achieved through a common curriculum for 5-year-olds]. *Korea Institute of Child Care and Education*, 25, 4–5.
- KICCE. (2019). *KICCE policy brief: Understanding the 2019 revised Nuri curriculum*.
- Lee, B. (2019). Yuagyoyugwajeong-eseo jayeongwan dasi bogi [Reviewing the view of nature in the Nuri curriculum]. *The Journal of Eco Early Childhood Education & Care*, 18(1), 155–178. <https://doi.org/10.30761/ecoece.2019.18.1.155>
- Li, M., Zhang, Y., Yuan, L., & Birkeland, Ä. (2019). A critical analysis of education for

- sustainability in early childhood curriculum documents in China and Norway. *ECNU Review of Education*, 2(4), 441-457. <https://doi.org/10.1177/2096531119893483>
- Malone, K., Tesar, M., & Arndt, S. (2020). Entangling childhoods, materials, curriculum and objects. In K. Malone, M. Tesar, & S. Arndt (Eds.), *Theorising posthuman childhood studies* (pp. 143–164). Springer.
- Ministry of Education. (1996/2017). *Te Whāriki: Early childhood curriculum*. <http://education.govt.nz>.
- Ministry of Education & Ministry of Health and Welfare. (2020). *2019 revised Nuri curriculum guide*. <http://www.moe.go.kr>
- Murris, K. (2016). *The posthuman child: Educational transformation through philosophy with picturebooks*. Routledge.
- Nxumalo, F. (2016). Storying practices of witnessing: Refiguring quality in everyday pedagogical encounters. *Contemporary Issues in Early Childhood*, 17(1), 39–53. <https://doi.org/10.1177/1463949115627898>
- Nxumalo, F. (2018). Stories for living on a damaged planet: Environmental education in a preschool classroom. *Journal of Early Childhood Research*, 16(2), 148–159. <https://doi.org/10.1177/1476718X17715499>
- OECD. (2021). *Embedding values and attitudes in curriculum: Shaping a better future*. OECD Publishing. <https://doi.org/10.1787/aee2adcd-en>.
- Pacini-Ketchabaw, V., & Nxumalo, F. (2015). Unruly raccoons and troubled educators: Nature/culture divides in a childcare centre. *Environmental Humanities*, 7(1), 151-168. <https://doi.org/10.1215/22011919-3616380>
- Purvis, B., Mao, Y., & Robinson, D. (2019). Three pillars of sustainability: In search of conceptual origins. *Sustainability Science*, 14, 681-695. <https://doi.org/10.1007/s11625-018-0627-5>
- Rooney, T. (2019). Weathering time: Walking with young children in a changing climate. *Children's Geographies*, 17(2), 177–189. <https://doi.org/10.1080/14733285.2018.1474172>
- Sellers, M. (2013). *Young children becoming curriculum: Deleuze, Te Whāriki and curricular understandings*. Routledge.
- Somerville, M., & Williams, C. (2015). Sustainability education in early childhood: An

- updated review of research in the field. *Contemporary Issues in Early Childhood*, 16(2), 102–117. <https://doi.org/10.1177/1463949115585658>
- Steffen, W., Crutzen, P. J., & McNeill, J. R. (2007). The Anthropocene: Are humans now overwhelming the great forces of nature? *A Journal of the Human Environment*, 36(8), 614–621. [https://doi.org/10.1579/0044-7447\(2007\)36\[614:taahno\]2.0.co;2](https://doi.org/10.1579/0044-7447(2007)36[614:taahno]2.0.co;2)
- Taylor, A. (2011). Reconceptualizing the ‘nature’ of childhood. *Childhood*, 18(4), 420–433. <https://doi.org/10.1177/0907568211404951>
- Taylor, A. (2017a). Beyond stewardship: Common world pedagogies for the Anthropocene. *Environmental Education Research*, 23(10), 1448–1461. <https://doi.org/10.1080/13504622.2017.1325452>
- Taylor, A. (2017b). Romancing or re-configuring nature in the Anthropocene? Towards common worlding pedagogies. In K. Maloney, T. Gray, & S. Truong (Eds.), *Reimagining sustainability in precarious times* (pp. 61–75). Springer.
- Taylor, A., & Giugni, M. (2012). Common worlds: Reconceptualizing inclusion in early childhood communities. *Contemporary Issues in Early Childhood*, 13(2), 108–119. <https://doi.org/10.2304/ciec.2012.13.2.108>
- Taylor, A., & Pacini-Ketchabaw, V. (2015). Learning with children, ants, and worms in the Anthropocene: Towards a common world pedagogy of multispecies vulnerability. *Pedagogy, Culture, Society*, 23(4), 507–529. <https://doi.org/10.1080/14681366.2015.1039050>
- Taylor, A., & Pacini-Ketchabaw, V. (2017). Kids, raccoons, and roos: Awkward encounters and mixed affects. *Children’s Geographies*, 15(2), 131–145. <https://doi.org/10.1080/14733285.2016.1199849>
- Taylor, A., Zakharova, T., & Cullen, M. (2021). Common worlding pedagogies: Opening up to learning with worlds. *Journal of Childhood Studies*, 46(4), 74–88. <https://doi.org/10.18357/jcs464202120425>
- United Nations. (1992). *Agenda 21*. <https://digitallibrary.un.org>
- UN. (2022). *Sustainability*. <https://www.un.org/en/academic-impact/sustainability>
- UNESCO. (2014). *Global citizenship education: Preparing learners for the challenges for the 21st century*.
- United Nations Environment Programme. (2010). *Emerging issues: Global honey bee colony*

*disorder and other threats to insect pollinators.*

van Dooren, T. (2016). *Flight ways: Life and loss at the edge of extinction*. Columbia University Press.

van Manen, M. (2016). *The tone of teaching* (2nd ed.). Routledge

Weldemariam, K. (2017). Challenging and expanding the notion of sustainability within early childhood education: Perspectives from post-humanism and/or new materialism. In O. Franck, C. Osbeck (Eds.), *Ethical Literacies and Education for Sustainable Development* (pp. 105-126). Springer.

Weldemariam, K., Boyd, D., Hirst, N., Sageidet, B., Browder, J., Grogan, L., & Hughes, F. (2017). A critical analysis of concepts associated with sustainability in early childhood curriculum frameworks across five national contexts. *International Journal of Early Childhood*, 49, 333–351. <https://doi.org/10.1007/s13158-017-0202-8>

Wooltorton, S. (2012). Sustainability: Ambiguity and aspiration in teacher education. In B. Down & J. Smith (Eds.), *Critical voice in teacher education* (pp. 257-272). Springer.