

# Is Sustainability Education Suitable for Children in Early Years Education? What Forms Can It Take?

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**Abstract:** In recent years, as people pay more and more attention to environmental issues, sustainable development, as a topic related to the future and development of all mankind, has attracted a growing number of people's attention. As the concept of "sustainability" has penetrated people's lives, the definition of "sustainable development" has become broader. It is closely related to human activities or global issues, such as financial crises, environmental degradation, and political instability that affect people's lives and futures. To a large extent, education can be regarded as the foundation that determines the future development of human beings. As UNESCO (2014) stated that it will not be able to tackle with the problems and issues of sustainable development only with the political agreements, financial incentives or technological solutions. A comprehensive change in our thinking and acting, and our interaction with the ecosystems will be required. This is where education can play a key role. Education for Sustainable Development (ESD in this essay) was also born in this context. With the implementation of ESD, the application of sustainable development concepts and related publicity and teaching activities can be seen in colleges and universities around the world. Although there are few related teaching activities in the early stage of children's education, some studies showed that early childhood education can help promote the realization of a sustainable society. Combining some current cases and research, this paper argues that sustainable development education is also suitable for early childhood education.

This article will demonstrate that ESD is suitable for children at early ages through the following three chunks. The first chunk is about the definition of ESD and the connections between ESD and early childhood education. This article explains the reasons for integrating ESD with early childhood education in chunk two. Finally, starting from the discussion of suitable forms of sustainable development education that can be used in early childhood education, this paper argues that sustainable development education is suitable for young children.

**Keywords:** Sustainability development; Children education

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## 1. The proposal of sustainability education and its connection with early children education

What is the meaning of sustainability? If it simply means the sustainable development of the environment, then in a sense sustainability education can also be replaced by environmental education. However, after studying previous researches, it is clear that sustainability education is different from environmental education. McMillan (2003) regarded that sustainability education differs from environmental education in that it necessarily includes environmental, social, and economic concerns. Human beings live in a complex age that lacks certainty and stability. This is because global human beings are faced with various challenges nowadays, such as global warming, decline in biodiversity, depletion of various non-renewable resources, industrially unsustainable production and not environmentally friendly consumption, international Political instability and growing inequality within and between countries, etc. The population increase, resource crisis, and ecological environment destruction brought about by the industrial revolution have caused people to question the traditional development model. More and more people become to realize that environmental problems are actually related to social and economic development issues, and they should not focus only on the environmental governance at the technical level but the environmental awareness training

level. This is how the idea of sustainable development has been gradually formed. Brundtland (1987) described the concept as “development that meets the needs of the present without compromising the ability of future generations to meet needs”. This concept expressed that the purpose of sustainable development is not to lower the current living quality of human beings but to seek a way of long-term development that meets the needs of both the present and future generations. Besides, sustainable development emphasizes the connections among social, political, environmental, and economic fields. It lays emphasis on the relationships between people and the connections between people and nature. As Church & Skelton (2010) claimed, the concept of global sustainable development made people realize that human beings are all connected when facing these series of challenges.

Education plays an essential role in sustainable development. The United Nations Educational, Scientific and Cultural Organization (UNESCO), a constitution that is dedicated to achieving the Sustainable Development Goals, believes that education is the foundation of sustainable development. The purpose of ESD is to help people around the world acquire knowledge about how to promote sustainable development. In 2015, UNESCO determined ESD as an important sustainable development goal in the 2030 Framework for Action on Education, and advocated countries to carry out sustainable development education. UNESCO holds the view that education is the key to fostering the transformation of values, attitudes, skills, behaviours, and ways of life among countries in order to promote sustainable development. Just as Wolff (2014) claimed, education that wants to publicize sustainability should build on the reinvention of basic educational theory and focus on human relationships with themselves, with each other, and with the rest of nature. Waller et al. (2017), also argued that education for sustainable development must recognize the interconnections of people, their social status, and their biological nature. Therefore, the importance of education in promoting sustainable development was recognized by the public. Gradually, there are more researches into sustainable development education for children at early age. Early childhood is an important period in which people's values, attitudes, lifestyles, and behavioral habits are formed. If children can understand the concept of sustainable development earlier, the greater their values and behaviors will be impacted. In addition, early childhood education also plays a role in promoting individual, family, and social development. Therefore, it is regarded that sustainable development education for early childhood, which combines the efforts of society and education can make effective contribution to the building of a sustainable society and bring endless benefits to society and future generations.

After the international conference of UNCED (United Nations Conference on Environment and Development) in 1992, children have been seen as an important group entitled to participate in sustainable development. In 2007, UNESCO established a special committee on "Early Childhood Education and Sustainable Development" at the University of Gothenburg in Sweden. Afterwards, sustainable development education has officially become a part of early childhood education. During early childhood education and care, children have the right to participate in environmental, social, economic, and political decisions and to understand and discuss ethical issues about the natural and nonhuman worlds (Waller, et al. , 2017). The United Nations Convention on the Rights of the Child (UNCRC, 1989) claimed that children should be given the right to participate in and have a voice in matters that affect them, these could include issues related to sustainable development, such as global warming, the political struggle for biocide, etc. Although these topics do not seem suitable for young children to understand, accept, or even talk about, they are undeniably related to children's future development and their destinies. As a result, scholars believed that young children should be entitled to participate in the discussion of such topics. This could help children understand and become active participants in the transition to a more sustainable lifestyle and world (Samuelsson, 2016).

It is necessary to clarify the relationship between Education for Sustainability (EfS, mainly in Australia), Education for Sustainable Development (ESD, mainly in Europe) and Early Childhood Education for Sustainable Development (ECEfSD). Education for Sustainability (EfS) is derived from Environmental Education (EE). In terms of the development of EE, the 1977 Tbilisi Statement was considered to be the first real expression of the critical role of environmental education, as it required teachers to receive environmental education as their priority. Then people started to know about environmental education consciously, understood it and promoted its development. As Davis (2010) stated, the concept of environmental education includes the following three aspects: direct experience in the environment, the concepts and knowledge about environmental processes and issues, development of learners' values and skills in environmental-related issues.

Then, in the 21st century, the concept of sustainable development derived from EE gradually developed, and the concepts of EfS and ESD were born. EfS and ESD take a more holistic view of sustainable development issues that people care about, and engage learners in real community activities (Davis, 2010). EfS and ESD are more comprehensive and extensive, and it seems to be a mental model calling for people to participate in it. As Lang (2007) stated, it “requires a deep understanding of

ourselves, our neighbours, our social and cultural processes and how we are connected". It can be seen that education and sustainable development are closely linked. However, constitutions and scholars did not seem to associate ESD with early childhood education. Davis (2009) found that despite the growing activity in the field of early childhood education, researchers still lacked the ability to understand, build on, and critique these developments in the field of sustainable education for early childhood. In the 2008 Guttenberg Recommendations on Education for Sustainable Development, it reported that "early childhood is a natural starting point for ESD in order to promote educational access for all people within a process of lifelong development" (p. 7). It seemed that an increasing number of people became to realize that early childhood education promotes sustainable development. Then the concept of ESCEfS came out, which is the fusion of EfS and ECE (Early Childhood Education) (Davis, 2010). More and more scholars believed that education for sustainable development and early childhood education are inseparable. In the meanwhile, more researches focused on children's participation in environmental education and sustainable development (Green, 2015).

## **2. Sustainable development education in early childhood education**

This paper believes that the primary reason why it is reasonable to carry out sustainable development education in early childhood education comes from the status quo of early childhood education. Although some scholars believed that education for sustainable development is not suitable for early childhood education, it seems to be an inevitable trend that sustainable development education is becoming a part of the early childhood education.

After sorting out relevant research, it can be concluded that some people think that sustainable development education should not be included in early childhood education may be attributed to the following viewpoints:

(1) Young children are weak and innocent members of society who need protection. This view may stem from an adult's tendency toward the outcome of current social development, that young children are innocent and weak in the face of the real world destroyed by their elders and should be protected from the harsh reality and be cared for by the elders (Duhn, 2012).

(2) Some people believe that the concept and content of sustainable development are not closely related to the vital interests of young children, so there is no need for young children to receive sustainable development education. That is to say, it is of little significance (Huggins & Evans, 2018).

(3) These people also believe that sustainable development education usually involves intergenerational, global, natural, and human systems, and the content is complex and abstract, which is beyond the cognitive ability of young children. As Duhn (2012) pointed out, childhood should be regarded as a period of innocence, and issues like sustainability are too complex for young children.

However, more researchers hold the view that early childhood education should include the content of sustainable development. As Davis & Elliott (2014) claimed, young children should also be responsible for sustainable development. It is necessary to break the stereotype that children are only victims of developmental problems and have no responsibility for solving problems left over by previous generations. Children are, in fact, in the same ecological environment as adults. For example, water pollution problems can also affect the survival and health of children. At the same time, children are always concerned about the surrounding life world and social environment. Therefore, combining early childhood education with ESD is not only about preparing for the future of humanity, but seeing young children as stakeholders in sustainability issues. This means that children also have the right to understand and seek solutions to sustainable problems (Green, 2013).

Second, although sustainable development is a complex concept, it does not mean that young children could not understand it. Many countries like Finland, China, Japan, Germany, Canada, and Singapore have added themes such as "sustainable development" and "environmental education" to students' basic science courses. For example, the Swedish Ministry of Education and Research and the Swedish Center for Sustainable Development Education jointly released The Gothenburg Recommendations on Education for Sustainable Development in 2008. The document believes that sustainable development education should start from early childhood and advocates its implementation. These practices make young children aware of the importance of environmental sustainability from an early age, help them establish an ecosystem view, understand the meaning of life and development, and actively participate in social events for the benefits of sustainable development. Afterwards, the Japanese Ministry of the Environment published the ESD (Education for Sustainable Development)/ SDGs (Sustainable Development Goals) brochure for children in 2018. The brochure clearly explains what is ESD, what is SDGs, and how to achieve SDGs. It teaches children what they can do and how to promote sustainable development. The booklet is expected to be used in Japan as a learning material for sustainable development for all children and as a reference for teachers, environmental educators,

and all stakeholders working on sustainable development in Japan and globally. By the end of February 2020, this brochure had been translated into English, Chinese, Korean, and Spanish and has been officially published. The popularity of this booklet among the countries suggests that many educational institutions support the spread of sustainable development education among young children. Children can be the main force in achieving global sustainable development in the future. In addition, the feasibility of integrating sustainable development education with early childhood education has already been proved by some countries. Some dedicated ESD documents have already incorporated the practice of ESD in early childhood education. For example, the Curriculum Framework for Sustainable Development Goals issued by the British federal government in 2017 covers the whole process of lifelong education from early childhood to adulthood. Young children are also the targeted group in this document as it aims to protect the ecosystems not only for all societies but also for the children. The curriculum framework is based on the 17 sustainable development goals proposed by the United Nations, and horizontally sets the goal system of sustainable development education from three dimensions: cognition and understanding, skills and application, as well as values and attitudes. With the policies and published documents that advocated sustainable development education for early childhood, some children have already been exposed to the educational environment and have formed their understanding of sustainable development with the help of schools and teachers.

Thirdly, this paper believes that sustainable development education is suitable for early childhood education is partly due to the connection between early childhood education and sustainable development. On the one hand, the concepts, and theories in the field of early childhood education could be re-interpreted from the perspective of sustainable development. For example, by studying some key concepts of Dewey, such as experiential learning, curiosity and critical thinking, children and nature, democratic participation, classroom, and community, etc. , educators might gain some implications for sustainable development education. In comparison to the current educational theories of sustainable development, Dewey's thoughts and concepts in early childhood education might offer some different illumination for sustainable development education for early childhood (Luff, 2018). On the other hand, sustainable development education for young children could also be re-explained from the theoretical perspective of early childhood education. For example, drawing from Montessori's thought that "children have internal driving forces and are 'civilization builders'", as well as other educational concepts, Boyd (2018) emphasized that educators should regard early childhood as a stage of change, empower children, and encourage them to become the main force for social change. Such studies demonstrated that early childhood education and sustainable development education are naturally correlated and that early childhood education has the advantages of carrying out sustainable development education. In addition, Davis (2014) pointed out that early childhood sustainability education is not to reduce or replace the more general play and learning experiences that are characteristics of early childhood education, as it does not mean to focus heavily on the environment or sustainability learning or programs. In other words, the traditional kindergarten curriculum, textbook strategies, and various forms of activities are still the main components of early education.

Nakashima & Elias (2002) suggested that ESD should underline the symbiotic relationship between human beings and nature. It is believed that human beings who are only a part of nature should show their respect for the laws of nature and live harmoniously with nature. This viewpoint also provides guidance for dealing with the relationship between people and the relationship between people and society. In addition, Otieno (2008) believed that human beings are becoming conscious of the necessity of sustainable development. Education for sustainable development can be considered as a strategy to achieve the long-term development of human beings and nature. Early childhood sustainable development education has its particular strength in advocating sustainable development. On the one hand, it is an important component of ESD based on indigenous knowledge. On the other hand, it plays a key role in ESD's ideal of respecting multiculturalism. Therefore, ESD is suitable for early childhood education. ESD is not an adjustment or reform of the original early childhood education, but an update and adjustment to adapt to the times.

Finally, it is believed that adding sustainable development education to early childhood education can achieve a win-win situation. First, for young children, sustainable development education helps children establish correct values and ecological outlook. Under the education of sustainable development, children will recognize the necessity of sustainability and form their responsibilities. Education for sustainable development allows children to get out of school and get in touch with real nature and society. At the same time, they could enrich their life experiences that are different from knowledge learning. After studying the concept of sustainable development, children will have their thinking and judgment on society, which will trigger their protection and respect for life and the environment. This will further facilitate the practical implementation of sustainable development. Second, ESD helps foster the inner productivity of young children. Comprehension, memory, judgment, problem-

solving ability and creativity, which belong to children's inner productivity, will be trained and strengthened in the process of sustainable development education. While young children participate in activities for sustainable development, they might be faced with different decisions and problems. In order to deal with the difficulties, they are expected to advance themselves both in thinking and acting abilities.

For sustainable development, the unique function of early childhood education contributes to the implementation of sustainable development. Through sustainable development education, children can develop the concept of sustainable development from an early age, acquire the scientific knowledge, and form their behavior habits, lifestyles and values required for the sustainable development of the world. This is crucial for the promotion of sustainable development.

However, Engdahl (2008) noted that early childhood education was often lessened to only learning function. This led to the loss of other functions such as childhood, family and gender. We should therefore underline the importance of early childhood education to balance the dual functions of society and education. From the perspective of the educational function, early childhood education can help children develop their communication and academic skills, as well as build a solid foundation for their future learning. It can also enhance their experience and help them develop a positive relationship with others. In terms of social functions, early childhood education can also help children develop their social functions by integrating them with communities and families. It can also promote gender equality and social cohesion by establishing support networks for low-income families. Early childhood education with both the social and educational functions can play a vital role in building a sustainable society. Besides, it can also benefit the development of children and families, and even society. Therefore, early childhood education should be covered in sustainable development education and be paid full attention to its role in building a sustainable society.

### **3. Sustainability education around world**

The Global Action Programme on Education for Sustainable Development (UNESCO, 2015) pointed out that ESD is about the transformation of comprehensive education and requires a "whole-institution approach". In other words, ESD not only needs an adjustment in teaching content and teaching methods but also requires appropriate facilities and school management, mutual cooperation between schools and sustainable development stakeholders in the community. Davis & Cooke (2007) summarized the characteristics of schools that carried out education for sustainable development. These include 1) a whole-school participation in the process; 2) a focus on the complementary relationship between schools, families, and communities; 3) the application of democratic and inclusive teaching methods with an emphasis on critical thinking; 4) an interdisciplinary approach, etc. With reference to some previous research about educational reform, early childhood behavior, and education for sustainable development, this article will discuss a feasible practice model of sustainable development education in early childhood education from the following three aspects: kindergarten curriculum (idea, content, and implementation), environmental creation, home, and community participation.

First, ESD repositions the curriculum as a vehicle for knowledge, ways of thinking and values to help create a sustainable world (Combes, 2005). After studying the concepts of ESD and the appropriateness of the Early Childhood Education Curriculum, it can be summarized as follows: (1) Curriculum designers and teachers should pay attention to the needs and characteristics of young children when cultivating their awareness, attitudes and values of sustainable development; (2) Educators should endow children with new roles and powers in the process of sustainable development education, enhance their critical thinking, encourage their participation in sustainable development activities and facilitate their capabilities (such as collaboration, problem-solving abilities). Therefore, when carrying out education for sustainable development for early childhood, teachers or relevant educators should transform the concept of sustainable development into goals and methods conducive to young children's understanding. For example, Ritchie (2013) reported that while conducting education for sustainable development, many kindergartens in New Zealand have built the curriculum concept of "caring for themselves, others and the environment" with an emphasis on children's external relations with the environment. This practice is to cultivate children's sense of belonging and identity with family, kindergarten, community, and the earth, thereby enhancing children's understanding of their relationship with others, society, and the natural world. Another example is that Kenmore West Kindergarten, located in Brisbane, Australia, combined its own early childhood curriculum with the concept of sustainable development proposed by Earth Charter, and proposed a new and distinctive value concept of early childhood education for sustainable development. The key points of the concept include democratic participation, active citizenship, critical and creative thinking, connection to nature, and connection to indigenous peoples.

In terms of the curriculum content of the kindergarten, the current curriculum content of sustainable development education for young children can be summarized into three areas, namely environment, economy, and social culture. In the field of environment, early childhood education courses for ESD usually cover natural resources, natural phenomena, and environmental protection. In the economic field, the sustainable development preschool curriculum includes currency, production and consumption, and resource recycling. As for the social-cultural field, the sustainable development curriculum for young children includes topics such as gender equality and cultural diversity. The content of these courses presents from multiple perspectives how people's lives are related to others, nature, and society.

In the curriculum of implementation of sustainable development education for young children, there are various ways summarized from previous literature. Samuelsson & Kaga (2008) pointed out that early childhood education institutions can learn from the implementation of previous successful courses and update their teaching approaches for sustainable development education. These might include a theme- or project-based interdisciplinary approach, a child-centred approach, the engagement of families and communities, a focus on holistic learning, and an exploration of children's different senses. As Davis & Elliott (2014) argued that the teaching methods for ESD project should be based on children's interests and life experiences, such as discussions, exploration, and decision-making activities. game-based teaching practices play an important role in early childhood education. Educators should pay attention to the content of ESD and combine sustainable development teaching with some interesting games and activities (Edwards & Cutter-Mackenzie, 2013). Therefore, the implementation of ESD for young children should reflect the child-centred principles, combine cross-disciplinary connections, employ diverse teaching methods, and highlight children's rights and powers.

Second, the establishment of kindergarten environment is the premise and foundation of sustainable development education in kindergartens. Kindergartens can improve children's learning of the environment through a variety of images and realize the importance of sustainable development from their surroundings. First, kindergartens could create an environment around the themes of nature. For example, by presenting elements from nature such as a variety of animal and plant resources in kindergarten's internal and external environment, children can have more opportunities to know nature and cultivate their affection for nature. In addition, posters about protecting rare animals and caring for nature could also be exhibited to help children develop their awareness of protecting the environment. The second point is to integrate children's perspectives into the environment design of the kindergarten. This can provide young children with opportunities to develop their creativity and get in touch with the natural world. As Boyd et al. (2017), reported, the Riverside Kindergarten in Scotland encouraged young children to actively participate in the creation of an outdoor environment. They assigned planting tasks to each child while teaching them to recognize the variety of plants and how to plant trees. Therefore, young children can personally participate in the process of planting, take care of their plants, and watch them grow. In this way, children can connect themselves with nature and realize that they, as a part of nature, can all contribute to the friendly environment. The last is to help young children recognize the importance of resource utilization and allocation. The behavior of resource recycling in kindergartens is one of the ways that children can participate in the project of sustainable development. On the one hand, recycling is conducive to improving children's attitudes towards waste and old objects. On the other hand, it helps children to re-examine waste and old objects, and give new meaning to waste utilization. Many kindergartens in Denmark have implemented sustainable development education through practices such as saving resources, repairing old toys, sorting garbage, and installing solar, wind, and other renewable energy devices. Under such situations, young children can adapt to an environmentally friendly lifestyle and understand the concept and practices of sustainable development.

Third, sustainable development education in kindergartens should cooperate with families and communities. Siraj-Blatchford (2009) held the view that close contact with the community helps to enhance interdependence among people and helps children develop the perception that people need to collaborate and work together to improve our environment and achieve sustainable development. Therefore, through positive interaction and cooperation among kindergartens, families and communities, the concept of sustainable development is popularized and an eco-friendly lifestyle for kids, families, communities and even society is promoted. In other words, successful sustainable development education for early childhood will not only positively affect young children but also influence the awareness and behaviours of adult groups, therefore contributing to the sustainable development of the entire human society. For example, while carrying out Early Childhood Education for Sustainable Planet, the College Kindergarten at the University of Queensland put emphasis on the participation of everyone in the community, including children, staff, family members, and members of the local community. The kindergarten provided opportunities for family and community members to participate in sustainable development activities in various ways (Davis, 2005). They used

their own resources and skills to organize social activities and fund-raising activities in the kindergarten through regular meetings; encouraged parents or community members to participate in green activities (such as planting, recycling, etc.) with their young children. Therefore, through close interaction and cooperation with families and communities, more adults could take part in the practice of sustainable development, which in return enhances ESD for early childhood.

## 4. Conclusion

Current examples of combining sustainable development with early childhood education across the countries have illustrated that sustainable development education is feasible and beneficial for young children. Through participating in the activities for sustainable development, children will not only gain rich knowledge about the environment and nature but also understand the impact of human behaviors on the environment and develop their awareness of environmental protection. Moreover, it is essential for young children, the future generations of human beings, to cultivate their consciousness of living an environmentally friendly lifestyle and realize the importance of achieving sustainable development. Although some scholars argued that the concept of sustainable development is beyond young children's understanding ability, there are more approaches to help with the implementation of ESD for early childhood, including the update of the sustainable development curriculum in kindergartens, the creation of the nature-friendly environment, and the cooperation with families and communities. In conclusion, it is undeniable that sustainable development education is suitable for early childhood education. It is hoped that this essay could provide some implications for the policymakers and educators in the fields of early childhood education and sustainable development.

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