

Exploring Exemplary Practices in Early Childhood Education for Sustainable Development: A Content Analysis of National Award-Winning Cases (2021-2025)

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Abstract

This study intends to identify characteristics of exemplary ESD practices in early childhood education for sustainable development (ESD) in Korea by analyzing 38 award-winning cases from ‘The Jaram Childcare Contest’ (2021–2025). Through qualitative content analysis, the study examined ESD's core domains, children's participation levels, and teaching and learning methods based on the 7R framework. It also explored collaboration among institutions, families, and communities. The findings reveal that most exemplary practices focused primarily on the environmental domain, often integrating socio-cultural values such as respect, relationships, and community responsibility. The economic domain appeared less frequently. Children's participation was generally moderate, with only a few cases in which children led the entire ESD process. Teaching and learning methods emphasized the socio-cultural aspects of the 7Rs, particularly respect and rethinking, which highlights reflective and relational learning. Many practices attempted to extend ESD to families and communities, but the continuity and depth of collaboration varied. Overall, these results suggest that early childhood ESD in Korea is gradually moving toward more integrated and participatory approaches. However, continued efforts are needed to strengthen child agency and sustainable collaboration between families and communities.

Keywords : Early Childhood Education and Care(ECEC), Education for Sustainable Development(ESD), Workplace Childcare Center, The-Jaram childcare contest

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Introduction

Sustainable development is a concept that encompasses the sustainability of society, the economy, culture, and the environment. The core goal is to ensure that future generations have the capacity to maintain and develop the current society (UN, 2015). To this end, the United Nations adopted the Sustainable Development Goals (SDGs) in 2015 as global common objectives. The SDGs propose 17 core goals to end poverty, protect the planet, and ensure peace and prosperity for all by 2030. Goal 4, in particular, states, "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all," suggesting that sustainable development is a lifelong learning issue, not one confined to a specific period or educational stage. Specifically, Targets 4.2 (Ensure inclusive and equitable quality early childhood development, care, and education for all) and 4.7 (Ensure inclusive and equitable quality higher education and promote lifelong learning opportunities and skills for all) indicate that quality Education for Sustainable Development (ESD) experiences must be provided from early childhood, which is the starting point of lifelong learning (Samuelsson & Park, 2017). ESD is defined as "education that enables individuals to recognize problems that threaten environmental, social, and economic development worldwide, actively address these problems, and cultivate the capacity to live sustainably" (Siraj-Blatchford et al., 2010).

Education for Sustainable Development (ESD) is a comprehensive concept that encompasses society and the economy, not just the environment. Its goal is to convey knowledge and information about sustainable development and to encourage changes in individual attitudes and awareness of it (Park & Han, 2022). Early childhood is a critical period when values and social attitudes toward the world are formed. Learning experiences during this time have long-term impacts throughout one's life. Early childhood education for sustainable development should help young children understand their relationship with the world around them and recognize themselves as agents within it. When young children think for themselves, reflect, and construct meaning through play and everyday experiences, it can lead to sustainable learning (Engdahl & Rabusicova, 2011; Samuelsson & Park, 2017). The World Organization for Early Childhood Education (OMEP), which has collaborated with UNESCO to promote ESD among young children worldwide, offers recommendations for effective implementation. First, young children must be recognized as agents in ESD and be

given the opportunity to think independently and reconstruct their experiences. It is crucial to support these experiences within children's play and daily lives, as well as to address environmental, economic, and socio-cultural dimensions in an integrated manner. The value of ESD is realized only when young children actively and proactively participate in the process and construct meaning themselves.

Interest in early childhood education for sustainable development has also gradually expanded in Korea, as evidenced by various prior studies. Studies have reported that early childhood environmental sustainability (ESD) activities and programs positively influence the development of various competencies in young children, including moral reasoning, scientific inquiry skills, problem-solving abilities, communication and decision-making skills, and environmentally friendly attitudes (Kim & Kim, 2018; Park & Park, 2014; Choi & Yoo, 2020). However, it has also been confirmed that ESD for young children is primarily perceived as environmental education and is implemented in early childhood education settings (Kim & Choi, 2016; Park & Han, 2022; Jang & Choi, 2015). The case studies of ESD covered in these prior studies have mainly focused on activities or programs based on individual early childhood education institutions or specific themes. Although research findings demonstrate that ESD can be implemented through play and everyday experiences, most studies merely present fragmented cases. Consequently, it is difficult to view these studies as reflecting the values and directionality that our society recognizes as important in early childhood ESD.

This study analyzes exemplary cases of early childhood education for sustainable development to identify the characteristics of exemplary practices and explore implications for future ESD in early childhood education. To this end, this study aims to identify the characteristics of exemplary ESD practices in early childhood education in Korea by analyzing 38 award-winning cases from the Jaram Childcare Contest (2021–2025). The study focused on the most recent five-year period (2021–2025) to capture contemporary exemplary practices reflecting the current educational context of ESD in Korea. The research questions for this study are as follows:

First, what characteristics do exemplary cases of sustainable development education for children in workplace daycare centers exhibit in terms of the core areas of sustainable development education, child participation levels, and teaching and learning methods?

Second, how are these exemplary programs expanding into homes and local communities to establish sustainable structures?

Method

This study is a content analysis of exemplary cases of sustainable development education (ESD) for young children, exploring characteristics of ESD practices in Korea and seeking implications. To systematically analyze exemplary early childhood ESD cases, the study examined the educational content, level of child participation, teaching and learning methods, and scalability of the educational practices throughout the ESD process. The goal of this analysis was to gain an in-depth understanding of the characteristics of practices recognized as ‘good early childhood ESD’ in Korea.

Research Subject

The research data comprised 38 award-winning ESD best practices—including Grand Prize, Excellence Awards, and Merit Awards—from the “Jaram Childcare Contest” for workplace daycare centers from 2021 to 2025. The 2021–2025 period was selected to examine the five most recent consecutive years of the contest available for analysis. The Jaram Childcare Contest is a nationwide competition organized annually by the Korea Workers’ Compensation & Welfare Service to promote high-quality childcare practices in workplace childcare centers across Korea. Workplace childcare centers operating in Korea were eligible to participate and could voluntarily apply to the ESD category by submitting educational programs implemented in their own settings. The submitted programs were evaluated by a panel of experts in early childhood education, childcare policy, and educational practice. The evaluation considered the ESD core areas, children's participation levels, teaching and learning methods, and cooperation between institutions and families. Awards were granted to cases that received the highest evaluations under these criteria. Award-winning programs are publicly disseminated and serve as reference models for other early childhood education institutions. Because the competition is conducted nationwide and

the winning cases are selected through a formal expert review process, these cases provide a valuable source for examining contemporary exemplary ESD practices in Korean workplace childcare centers and identifying characteristics of exemplary ESD practices in early childhood education for sustainable development. The title and target age group for each case are listed below.

Table 1. *The title and target age group for exemplary early childhood ESD cases*

Year	Title of Award Winning Case	Award category	Target age
2021	True Play, True Happiness, True Education	Grand Prize	1-5 yr olds
	Useful Rights You Should Know About	Best Prize	5 yr olds
	Practicing Respect for Children's 'Daily' Rights		1 yr olds
	Rediscovering discarded objects	Excellence Prize	5 yr olds
	Step by Step Toward Rights Day: 7 Steps		2-5 yr olds
	In play, our rights grow tall and strong		0-5 yr olds
2022	Refresh	Grand Prize	3-5 yr olds
	Otubugi	Best Prize	1-2 yr olds
	Deploy! Earth Special Forces		5 yr olds
	Bee happy together		3-5 yr olds
	Protect the Earth through our daily habits	Excellence Prize	3-5 yr olds
	Arithmetic for the Earth		3 yr olds
	G: Gather our thoughts, S: Together, E: Let's protect the Earth.		5 yr olds
	Recover our Earth! Recover our play!		1-5 yr olds
	Children as the Center of the World	Grand Prize	3-5 yr olds
2023	Walk together, footsteps of smiles	Best Prize	1-5 yr olds
	Let's walk together side by side		4-5 yr olds
	Heart Talk Signal		4 yr olds
	Gather round! Earthworm Hero!	Excellence Prize	3 yr olds
	Save the Green Earth!		4 yr olds
	K-play culture passing down		5 yr olds
	Let's practice together: 'Tree Planting'		1-5 yr olds
	Let's build the strength to protect the Earth right here, right now	Grand Prize	0-2 yr olds
2024	Our precious treasure	Best Prize	4-5 yr olds
	We are the Earth's environmental heroes!		4 yr olds
	Green the Curious Frog's Journey to the Sea	Excellence	4 yr olds

2025	Coexisting	Prize	4-5 yr olds
	We are Greenping, benefiting the Earth		3 yr olds
	Earth Defense Force: Guardians of Earth's Health and Peace		3-5 yr olds
	Thank you honeybee for giving us sweet honey		3-5 yr olds
	Our Small Choices in Everyday Life -The First Step Toward a Sustainable Future	Grand Prize	3-5 yr olds
	The Play Resource Lab We Build Together	Best Prize	3-4 yr olds
	K-Kids Press Corps		3-5 yr olds
	Tree of Life: The Miracle of Cheongsong Wildfire Village		3-5 yr olds
	Shared Value, Shared Consumption	Excellence Prize	3-5 yr olds
	Poverty slowly fading away, Dreams steadily growing stronger.		4-5 yr olds
	The world we desire		3-5 yr olds
	Team Child: Changing the World		3-5 yr olds

Analysis Criteria

This study was structured around four key areas based on the World Organization for Early Childhood Education(OMEP) ESD Rating Scale(2019) and prior research on early childhood ESD (Engdahl & Rabusicova, 2011; Engdahl & Furu, 2022; Hart, 1992; Pramling Samuelsson & Park, 2017; UNESCO, 2020) to identify characteristics of exemplary practices in early childhood education for sustainable development in Korea.#

The four areas are as follows: First, it examined which domain-environmental, economic, or sociocultural-was primarily focused on in ESD implementation. This is because ESD is implemented multidimensionally within an integrated concept where the environmental, economic, and sociocultural dimensions are closely interconnected. The ESD core areas (environmental, economic, and socio-cultural dimensions) were derived from UNESCO (2020) and the OMEP framework. Second, we examined whether young children function as agents of problem recognition and action by assessing their level of participation in ESD processes. ESD is meaningful when it occurs within an educational environment that enables young children to think, reflect, and act independently. It is then that young children can become agents of change. This analysis aimed to identify the level of participation exhibited

by young children during the stages of issue identification, decision-making, implementation, and sharing, based primarily on Hart's (1992) participation model and OMEP's emphasis on children as active agents. For example, a case in which children identified a local environmental issue, discussed solutions, selected an action, and implemented it was coded as high-level participation. Cases in which teachers identified the issue and directed the main course of action were coded as moderate-level participation, whereas cases largely limited to teacher-directed activities were coded as low-level participation. When cases showed characteristics across multiple levels, the final coding was determined by considering the overall extent and quality of children's agency across these stages, based on the operational definitions in Table 2. Third, we examined the characteristics of teaching and learning methods used in ESD cases primarily through the lens of OMEP's 7R educational approach principles for ESD (Respect, Reflect, Rethink, Reduce, Reuse, Recycle, Redistribute). This is crucial for determining whether ESD functions as transformative learning that encompasses values, reflection, critical thinking, and relationship building beyond practice-centered behavioral education. Teaching and learning methods were analyzed using OMEP's 7R principles (Respect, Reflect, Rethink, Reduce, Reuse, Recycle, Redistribute). Fourth, the study examined whether the cases formed sustainable structures by assessing their connectivity and scalability with families and local communities. If ESD remains confined to the experiential level of the individual child or institution, its educational impact is inevitably limited. It can only expand into meaningful learning when connected to families, local communities, and social values. Thus, we examined whether the early childhood ESD education in each case was institution-centered and if connections with families or the community were well-established. The category of family and community linkage was developed from OMEP's emphasis on partnerships and sustainability beyond the classroom together with previous studies highlighting family and community engagement in ESD. By examining the patterns of connection between institutions, families, and communities, we assessed the strength of these connections. The theoretical concepts and detailed analysis indicators for each criterion are presented in Table 2.

Table 2. *Criteria for analyzing exemplary early childhood ESD cases*

Analysis area	Detailed Analysis Criteria
The focus of ESD core area	- Does the content of ESD education focus on specific areas, such as the environment, economy, society, and culture?
Level of participation among the target children	- What is the age of the target children? - Are young children actively participating and taking the lead at each stage of the ESD process: problem identification, decision-making, implementation, and sharing? - (High level) Children take the lead throughout the entire process - (Moderate level) Children actively participate in two to three stages, taking the lead through practice - (Low level) Although children may have experience with practice or participation, they are limited in their involvement in proactive decision-making processes of most other stages
Characteristics of ESD Teaching and Learning Methods	- What are the 7R experiences for young children in the ESD curriculum? - (Environmental) Reduce: Use less and reduce waste - (Environmental) Reuse: Reusing existing items - Reevaluating the value of objects - (Socio-cultural) Respect: Respect for nature, others, and life. - (Socio-cultural) Rethink: Rethinking consumption and value - (Socio-cultural) Reflect: Reflection on other lives and cultures - (Economic) Recycle: Resource recycling - (Economic) Redistribute: Equitable redistribution of resources
Sharing, Linking, and Expanding Across the Family and Community	- Is ESD implementation being carried out in an integrated manner that connects both the home and the local community? - What is the level of collaboration between institutions, homes, and the community?

Data Analysis

Qualitative content analysis was conducted to examine the exemplary ESD practices. The analysis proceeded through the following steps. First, the researcher repeatedly read all 38 exemplary case materials in detail to become familiar with the overall context, educational objectives, activities, and implementation processes of each case. Second, initial coding was conducted by the researcher based on the analytical framework developed from previous research and the OMEP framework. Meaningful units were extracted from each case and coded according to the predefined analytical categories and indicators. Because a single case

could contain multiple characteristics relevant to different analytical categories, multiple coding was allowed when appropriate. Third, the coded data were compared and categorized across cases to identify recurring patterns and distinctive characteristics of exemplary ESD practices.

For example, one case described an educational project in which children worked with their teacher to identify a local waste problem, discussed its possible causes, proposed several solutions, voted to select one solution, and subsequently implemented a campaign to address the issue. This case illustrates how multiple analytical categories were applied to the same case. In terms of the **ESD core domains**, the case was coded primarily within the environmental domain because the central educational issue concerned reducing waste and protecting the environment. Regarding **children's participation levels**, the case was coded as high-level participation because children were involved in multiple stages of the educational process, including identifying the issue, discussing its causes, proposing possible solutions, making a collective decision through voting, and implementing the selected action. In relation to the **7R framework**, the case was coded across three Rs based on the specific learning experiences described. Reduce was identified because the activities focused on recognizing the need to reduce waste and changing practices to minimize waste generation. Respect was identified because the activities aimed to foster children's respect and sensitivity toward the environment. Recycle was identified because the children explored the sorting and recycling of discarded materials as part of addressing the waste problem. Thus, the 7R coding was based on the specific meanings and learning experiences embedded in the activities rather than on the overall theme of the project alone. For **family–community collaboration**, the case was coded as demonstrating a high level of linkage because the educational experience extended beyond children's awareness and practices within the childcare center. After recognizing the need to reduce waste and engaging in related practices within the center, the children participated in a campaign that extended this message to their families and the local community. Thus, the case demonstrated an expansion of ESD learning from the institutional setting to the home and community, with children actively contributing to the dissemination of sustainable practices beyond the childcare center.

This example illustrates how the four analytical categories were applied to each case. Rather than assigning a single code to an entire case, the researcher identified meaningful

units within each case and analyzed them according to each analytical category. Therefore, a single case could be coded simultaneously across the four categories and could receive multiple codes within a category when different characteristics were evident. For example, the case described above was coded as environmental in the ESD core domain, high-level children's participation, Reduce, Respect, and Recycle in the 7R framework, and high family–community linkage.

The researcher conducted the initial coding independently. Because the study involved a single researcher, inter-coder agreement was not calculated and there were no disagreements between multiple coders to resolve. The expert review was therefore used to enhance the credibility and transparency of the analysis, although it was not treated as a statistical measure of inter-coder reliability. Two external experts in early childhood education and ESD were invited to review the analytical framework and preliminary coding results. One expert primarily reviewed the conceptual appropriateness of the analytical framework, while the other focused on the consistency and appropriateness of its application to the case materials. When differences in interpretation or ambiguity arose regarding the coding of any of the four analytical categories, the researcher presented the relevant case material and coding rationale to the experts for consultation. The researcher then reconsidered the coding decision based on their feedback and confirmed or revised the final coding. Through this process, the study sought to enhance the validity, consistency, and transparency of the qualitative analysis.

Research Positionality

The researcher is a specialist in early childhood education and has been actively involved in the Korea Committee of the World Organization for Early Childhood Education (OMEP) since 2013, contributing to professional activities related to Education for Sustainable Development (ESD). The researcher has also conducted research and published scholarly work on ESD in early childhood education in Korea. This background provided a strong understanding of both the theoretical foundations and practical implementation of ESD, supporting informed interpretation during the qualitative content analysis. To minimize potential researcher bias, the analytical framework was developed based on previous studies and the OMEP framework, and the coding process and preliminary findings were reviewed

by external experts in early childhood education and ESD.

Results

This section presents the characteristics of exemplary early childhood education for sustainable development practices in terms of ESD core areas, children's participation levels, teaching and learning methods, and connections with families and communities. The results of examining home and community connections and scalability are as follows.

ESD core area patterns in exemplary early childhood ESD cases

According to <Table 3>, the environmental domain was the core area most frequently focused on in exemplary early childhood ESD cases. Cases focusing on both environmental and socio-cultural aspects followed. This suggests that the environmental domain is prevalent in the cases, either as an independent topic or integrated with the sociocultural domain. Meanwhile, only two cases addressed the economic domain alongside the environmental domain, and only one addressed it alongside the socio-cultural domain. These results suggest that the economic domain is less frequently treated as a primary core area in outstanding early childhood ESD cases.

Table 3. The ESD core area for exemplary early childhood ESD cases

ESD Focus Area	Case(n)	Ratio(%)
Environment area	15	39.5
Environment + Socio-cultural area	10	26.4
Environment + Socio-cultural + Economic area	5	13.1
Socio-cultural area	5	13.1
Environment + Economic area	2	5.3
Socio-cultural + Economic area	1	2.6

Children's participation levels in exemplary early childhood ESD cases

According to Table 4, the most common participation level among young children in early childhood education for sustainable development was moderate (39.5%), followed by low (31.6%) and high (28.9%). Most practices with low participation levels involved children aged 1 to 2 year olds or encompassed all age groups, from age 0 to 5 year olds. Conversely, all exemplary cases with high participation levels targeted children aged 3 to 5 year olds, with many conducting education for a single age group. In other words, although young children are somewhat involved in exemplary cases of early childhood sustainability education (ESD) for infants and toddlers, cases in which young children led the entire process—from identifying problems to making decisions, implementing them, and sharing results—remain relatively limited.

Table 4. *Children's participation levels in exemplary early childhood ESD cases*

Participation level	Case(n)	Ratio(%)	Characteristics of the Participation level
High level	11	28.9	Problem Identification - Decision-Making - Implementation - Sharing: Young children take the lead throughout the entire process
Moderate level	15	39.5	Children actively participate in two to three stages, taking the lead through practice
Low level	12	31.6	Although children may have experience with practice or participation, they are limited in their involvement in proactive decision-making processes of most other stages

7R based teaching and learning methods in exemplary early childhood ESD cases

An analysis of teaching and learning methods in exemplary early childhood ESD cases based on the 7R framework revealed that experiences related to *Respect*—meaning respect for nature, others, and life—appeared in 86.8% of cases, representing the highest frequency among the 7R elements. Experiences related to *Rethink*, involving reconsideration of consumption and values, followed at 36.8%. In contrast, experiences related to *Reduce* (minimizing resource use and waste generation) and *Redistribute* (sharing resources and

promoting equitable access) each accounted for 18.4% of the cases, indicating that these aspects of ESD were less frequently addressed in the exemplary cases.

Table 5. *7R based teaching and learning methods in exemplary early childhood ESD cases: Frequency of 7R*

Frequency of each 7R	Case(n)	Ratio(%)
Reduce	7	18.4
Reuse	4	10.5
Respect	33	86.8
Rethink	14	36.8
Reflect	4	10.5
Recycle	13	34.2
Redistribute	7	18.4

Table 6. *7R based teaching and learning methods in exemplary early childhood ESD cases: ESD core-domain patterns by 7R application*

Patterns of 7R Application by case	Case(n)	Ratio(%)
Socio-cultural area	18	47.4
Environment + Socio-cultural area	10	26.3
Socio-cultural area +Economic area	4	10.5
Environment + Socio-cultural + Economic area	3	7.9
Environment + Economic area	1	2.6
Environment area	1	2.6
Economic area	1	2.6

The analysis of ESD core-domain patterns showed that 47.4% of the cases focused exclusively on the socio-cultural domain. In addition, 26.3% of the cases demonstrated a balanced integration of environmental and socio-cultural domains. By contrast, cases focusing exclusively on either the environmental or the economic domain were relatively rare, each accounting for only 2.6% of the total cases.

Overall, the findings suggest that while individual 7R elements—particularly *Respect*—were frequently incorporated into exemplary practices, these elements were most often implemented within activities emphasizing the socio-cultural dimension of ESD rather than the environmental or economic dimensions.

Family-community collaboration in exemplary early childhood ESD cases

An analysis of exemplary early childhood ESD cases revealed that those showing low linkage levels between institutions, homes, and communities accounted for the highest proportion (42.1%). Cases demonstrating high levels of linkage among institutions, homes, and communities followed at 18.4%. Meanwhile, cases showing linkage between institutions and the community accounted for 7.9%. Cases where ESD education was institution-centered and lacked linkage to either home or community were the lowest at 10.5%. These results suggest that approximately 60% of exemplary early childhood ESD practices are based on connections between institutions, homes, and communities, integrating institutional experiences with everyday practices at home and in the community. However, while some cases consistently supported meaningful connections with families and the community throughout the curriculum, others were limited to one-time experiences. This suggests that the level of connection varied significantly between cases.

Table 7. *Family–community collaboration in exemplary early childhood ESD cases*

Collaboration type	Linkage level	Case(n)	Ratio(%)
Institution centered		4	10.5
Institution-Home Collaboration	Low level	3	7.9
	High level	5	13.2
Institution-Community Collaboration	Low level	0	0.0
	High level	3	7.9
Institution-Home- Community Collaboration	Low level	16	42.1
	High level	7	18.4

Discussion

Characteristics of exemplary early childhood ESD cases

An analysis of exemplary early childhood ESD cases revealed the following results when focusing on ESD core domains, the level of children's participation, ESD teaching and

learning method characteristics based on the 7Rs, and collaborations with home and community.

Integration of the ESD domains

First, the majority of exemplary ESD cases focused on the environmental domain or integrated it with the socio-cultural domain. One possible explanation for the predominance of the environmental domain is the historical development of ESD in Korea. Since ESD has frequently been introduced through environmental education initiatives, many teachers may naturally associate sustainable development primarily with environmental issues. Consequently, environmental topics may be more readily translated into classroom activities than economic sustainability, which tends to be perceived as abstract and developmentally challenging for young children. Also this suggests that, while starting from environmental issues, early childhood ESD is gradually expanding to encompass sociocultural values such as relationships, rights, and communal responsibility. This trend aligns with Pramling Samuelsson and Park's (2017) discussion that the meaning of sustainable development should be constructed within young children's everyday experiences and relationships with others. Furthermore, identifying numerous cases that integrate the environmental and socio-cultural domains empirically supports Engdahl et al.'s (2011, 2022) perspective that views early childhood education as a relational learning space that prepares children for the transition to a sustainable society. Conversely, the relatively low proportion of cases incorporating the economic domain is consistent with Kahrman-Öztürk et al.'s (2012) observation that young children have difficulty grasping the concept of economic sustainability directly. However, this does not necessarily imply that the economic dimension should receive less emphasis in early childhood ESD. Previous research (Choi & Lim, 2025) has demonstrated that developmentally appropriate educational approaches, such as shared book reading using ESD picture books, can effectively foster young children's understanding of economic concepts while simultaneously promoting environmentally friendly attitudes. These findings suggest that economic sustainability can be meaningfully integrated into early childhood ESD when abstract concepts are embedded in familiar stories and everyday experiences. Accordingly, future early childhood ESD curricula should move beyond an environmental focus by incorporating developmentally appropriate learning experiences that also address economic

sustainability through stories, play, inquiry, and everyday decision-making. As Siraj-Blatchford et al. (2010) proposed, ESD is a comprehensive concept not confined to specific domains that cultivates the ability to recognize and address issues that threaten global environmental, social, and economic development. Since it aims to change individuals' attitudes and awareness of sustainable development, early childhood ESD should be structured around experiences in which young children discover and explore issues across various domains in their daily lives and share how they solve them. Through these experiences, young children's attitudes and awareness toward sustainable development can naturally change.

Children's participation in ESD

Second, although children's participation levels were above a minimum threshold in exemplary education for environmental sustainability (ESD) cases, instances in which the children took the lead throughout the entire educational process were relatively limited. Pramling Samuelsson and Park (2017) argued that participation in early childhood ESD does not occur naturally but is instead reinforced through intentionally designed curricular contexts which enable children to ask questions, make choices, and construct meaning. The finding that "moderate" levels of participation were most prevalent in this study suggests that, although many exemplary cases included young children's participation during practical activities, teachers still played a central role in stages involving identifying real issues from the children's lives, raising problems, and making decisions for problem-solving. Meanwhile, cases showing low levels of participation by children were predominantly those involving mixed-age groups, such as those aged 1–5 years. This underscores the importance of interpreting participation in relation to the developmental characteristics of children. Engdahl and Rabušicová (2011) and Engdahl and Furu (2022) emphasized that participation in infancy should not be understood merely as decision-making autonomy but also as active engagement in responses and experiences within relationships. From this perspective, the low participation levels observed in this study are less indicative of limitations in educational quality and are more indicative of participation patterns that differ according to age and developmental stage. However, the fact that all cases of high participation targeted children aged 3 to 5 years, particularly single-age groups centered on 4- or 5-year-olds, suggests that

high participation among young children can be promoted more effectively when developmental conditions and curriculum structure are combined. This suggests the need to recognize young children as active participants and gradually expand and support the scope and depth of their participation according to their developmental level.

Teaching and learning methods based on 7Rs

Third, the teaching and learning methods evident in exemplary early childhood ESD cases centered on respect and rethink from the social and cultural domain of the 7R framework, while the environmental and economic domain Rs, such as reuse or redistribute, showed relatively lower prominence. This suggests that early childhood ESD focuses on respect for others and nature, as well as perspective shifting, rather than on resource management or behavioral norms. The predominance of Respect and Rethink may also reflect the educational philosophy of Korean early childhood education, which emphasizes relationship building, empathy, and character education. Rather than teaching sustainability as a set of environmental behaviors, teachers appear to interpret ESD as fostering caring relationships with others, nature, and the community. These findings also align with the OMEP's perspective that the 7Rs should be viewed as qualitative directions for teaching and learning, not as a list of actions. As Pramling Samuelsson and Park (2017) emphasize, the crucial aspect of early childhood ESD is facilitating a process in which young children rethink the world and construct meaning through their own experiences, not teaching specific behaviors. The limited appearance of the Rs (Reuse and Redistribute) in the environmental and economic domains is also related to the developmental characteristics of young children. According to Kahrman-Öztürk et al. (2012), concepts such as resource conservation and fair distribution are cognitively abstract for young children, which makes them difficult to teach directly as concepts or rules. Due to these developmental characteristics, Reuse and Redistribute were not presented as independent teaching content in the early childhood ESD cases examined in this study. Instead, these concepts were indirectly addressed within socio-cultural experiences centered on relational experiences with others, community activities, respect, and perspective-taking. This suggests the importance of focusing early childhood environmental sustainability (ESD) education on helping young children develop proper attitudes and perspectives toward others and the world in their daily lives. In this context, the

teacher's role is not just to transmit knowledge or instruct behavior, but also to support young children in experiencing and understanding respect for others and living beings, as well as perspective-taking, across diverse contexts and dimensions.

Family-community collaboration

Fourth, exemplary early childhood ESD cases often involved education grounded not only at the institutional level, but also through collaboration between the family and the community. This suggests that early childhood ESD extends beyond educational institutions to include home and community settings. However, the most common cases showed low levels of linkage between institutions, families, and communities, indicating that early childhood ESD often connects with homes or communities in a one time or fragmented activities. The relatively limited level of collaboration may reflect structural constraints faced by early childhood institutions. Building sustained partnerships with families and community organizations requires considerable time, resources, and institutional support. Therefore, although teachers recognize the importance of collaboration, implementing continuous partnerships remains challenging in everyday educational practice. Pramling Samuelsson and Park (2017) argued that ESD gains meaning when it is continuously integrated into young children's daily lives. The findings of this study show that many cases still lack sufficient continuity. Meanwhile, the few cases demonstrating high levels of linkage between institutions, homes, and communities showed the potential for early childhood ESD to extend beyond educational institutions into daily life and the community. These cases featured continuous communication with families, collaboration with community resources, and shared practical experiences integrated throughout the curriculum. This can be interpreted as the practical implementation of participation and cooperation—one of the core principles of ESD emphasized by OMEP.

Educational Implication for Early Childhood ESD in Korea

The findings of this study provide several implications for the future development of early childhood ESD. First, future ESD curricula should be designed to integrate environmental, socio-cultural, and economic dimensions more systematically rather than emphasizing

environmental issues alone. A balanced approach would enable young children to develop a more holistic understanding of sustainability through meaningful everyday experiences.

Second, teacher education programs should provide practical guidance on facilitating child-led inquiry, supporting children's participation in decision-making, and incorporating the economic dimension of sustainability into developmentally appropriate learning experiences. Professional development should also strengthen teachers' capacity to design participatory learning environments that encourage children's agency.

Third, ESD should move beyond project-based activities toward long-term educational ecosystems that strengthen partnerships among early childhood institutions, families, and local communities. Sustained collaboration among multiple stakeholders is essential for embedding sustainable values into children's everyday lives.

Finally, this study demonstrates the value of analyzing exemplary practices as a means of identifying practical directions for implementing ESD in early childhood education. Rather than presenting idealized theoretical models, exemplary cases illustrate how sustainability can be translated into authentic educational practice, thereby providing useful references for curriculum development, teacher education, and policy.

Limitations and Future Directions

Despite its contributions, this study has several limitations. First, the findings are based exclusively on award-winning cases from the Jaram Childcare Contest and therefore should not be generalized to all ESD practices in Korean early childhood education settings. While these cases provide valuable insights into exemplary practices recognized through a national evaluation process, they may not fully represent the diversity of everyday educational practice. Second, because this study employed qualitative content analysis of written documents, the findings were necessarily limited to the information presented in the contest materials. The actual implementation process, teachers' pedagogical intentions, and children's experiences could not be directly examined. Finally, this study identified the common characteristics of exemplary ESD practices but did not evaluate their educational outcomes or long-term impact on children's learning and development.

Future research should therefore expand beyond document analysis by incorporating

classroom observations, teacher interviews, and children's perspectives to provide a richer understanding of how ESD is enacted in practice. Comparative studies across different types of early childhood education settings and cultural contexts would also help examine the transferability of exemplary practices. In addition, longitudinal research is needed to investigate how participation in ESD influences young children's sustainable attitudes, competencies, and behaviors over time.

Conclusions and Contributions

This study provides one of the first comprehensive analyses of nationally recognized exemplary ESD practices implemented in Korean workplace childcare centers. By examining exemplary cases through an integrated analytical framework encompassing the ESD domains, children's participation, the 7R framework, and home–community collaboration, the study offers a comprehensive understanding of how sustainability is enacted in early childhood educational practice.

The findings contribute to both research and practice by identifying current characteristics of exemplary ESD implementation and suggesting future directions for curriculum development, teacher education, and community-based partnerships. As ESD continues to expand within early childhood education, the present findings provide practical evidence that may support the design of more integrated, participatory, and sustainable educational environments for young children.

References

- Choi, H., & Lim, H. (2025). The Effects of Shared Book Reading Using Education for Sustainable Development Picture Books on Young Children's Economic Concepts and Environmentally Friendly Attitudes. *Journal of Early Childhood Education Research*. 45(2), 153-175.
- Choi, Y., & Yu, Y. (2020). A Study on the Development of Sustainable Environmental Education Program for Young Children. *Journal of Educational Development*. 40(1),

149-172.

- Engdahl, I., & Rabušicová, M. (2011). Education for sustainable development in practice. In Engber, A. K. (Ed.), A report for the OMEP world assembly and conference on the OMEP world ESD project 2010-2011. Gotenberg, Sweden: OMEP.
- Engdahl, I., & Furu, A. C. (2022). Early childhood education: A vibrant arena in the complex transformation of society towards sustainability. *International Journal of Early Childhood*, 54(1), 1-12.
- Jang, S., & Choi, H. J. (2015). The Recognition Study of Preliminary Early Childhood Teacher. *Korean Education Inquiry*. 33(4), 235-254.
- Kahriman-Ozturk, D., Olgan, R., & Guler, T. (2012). Preschool Children's Ideas on Sustainable Development: How Preschool Children Perceive Three Pillars of Sustainability with the Regard to 7R. *Educational Sciences: Theory and Practice*, 12(4), 2987-2995.
- Kim, E., & Kim, Y. (2018). The Effects of Children's Environment Friendly Attitude and Scientific Inquiry Skills through the Natural Environment Education based on Education for Sustainable Development. *Journal of Future Early Childhood Education*. 25(3), 227-248.
- Kim, J., & Choi, S. (2016). Pre-service Teachers' Understanding of Education for Sustainable Development: Analysis of Reflection Journals Collected from the 'Early Childhood Education for Sustainable Development' Class. *Early Childhood Education Research & Review*. 20(5), 59-80.
- Park, E., & Park, S. (2014). The process and meaning of biodiversity education in early childhood using the ESD (Education for Sustainable Development) learning model. *Journal of Research Institute of Curriculum & Instruction*, 18(1), 1-26.
- Park, E., & Han, S. (2022). Research trends on education for sustainable development in early childhood in Korea using keyword network analysis. *Journal of Educational studies*, 53(3), 383-402.
- Park, E., Kim, H., & Yu, S. (2016). Perceptions and attitudes of early childhood teachers in Korea about education for sustainable development. *International Journal of Early Childhood*, 48, 369-385.
- Samuelsson, I. P., & Park, E. (2017). How to educate children for sustainable learning and

- for a sustainable world. *International Journal of Early Childhood*, 49(3), 273-285.
- Samuelsson, I. P., & Park, E. (2017). Transforming Early Childhood Systems for Future Generations. *International Journal of Early Childhood*, 49(2), 133-136.
- Siraj-Blatchford, J., Smith, K. C., & Samuelsson, I. P. (2010). Education for sustainable development in the early years. Buenos Aires, Argentina: OMEP, World Organization for Early Childhood Education.
- UNESCO (2020). *Education for sustainable development: A road map*.
- United Nations (UN). (2015). *Transforming our world: The 2030 agenda for sustainable development* (A/ Res/70/1). New York: UN General Assembly. Retrieved from <http://sustainabledevelopment.un.org>