

Korean Early Childhood Teachers' Perceptions of the Importance and Performance of the "Play Environment"

Bora Kang

Hong-Ju Jun¹⁾

Seenyoung Park

Sungshin Womens University

Bucheon University

Abstract

The purpose of this research is to analyze the factors that need to be improved to provide the quality play environment in early childhood education (ECE). This study is designed to examine the differences between the importance and performance of the play environment as perceived by early childhood teachers in Korea. For the analysis, the play environment was divided into "environment giving comfort," "environment supporting child-initiated learning," "environment fostering aesthetic sensitivity," and "environment fostering creativity." A total of 277 early childhood teachers completed the online questionnaire, and the data obtained were analyzed based on mean, standard deviation, paired-sample t-test, and importance-performance analysis. Results indicate that, first, the importance of the play environment was statistically significantly higher than performance across all areas. Second, the area where the current situation can be maintained was "environment giving comfort." The areas requiring intensive improvement were "environment supporting child-initiated learning" and "environment fostering aesthetic sensitivity." The area requiring gradual improvement was "environment fostering creativity." The findings from this study have implication in providing effective play environments in ECE institutions.

Keywords: play environment, Importance-Performance Analysis, Korean ECE, teachers' perception

Corresponding author, ¹⁾ hjun@sungshin.ac.kr

Introduction

The educational environment informs young children what activities they can play, what materials they can play with, and what support they can obtain from teachers. The environment facilitates social interaction among young children, enabling them to play proactively, make their own choices, and solve problems, leading them to discover and explore. Accordingly, Taylor and Vlastos (2009) referred to the educational environment as a “silent curriculum,” while Curtis and Carter (2003) described the educational environment as the most visible form of curriculum practice that teachers can do. Reggio Emilia regarded the educational environment as a “third teacher,” along with two teachers in class (Gandini, 2012, p. 339). As such, in ECE, environment has been recognized as an essential element in implementing curriculum.

Children in ECE institutions with excellent educational environments have high self-esteem (Lee et al., 2004), high levels of creativity (Kim & Cho, 2005), and high cognitive abilities (Allen & Fraser, 2007; Downer et al., 2010; Maxwell, 2007). They are also stimulated to explore actively during play (Kwon & Lee, 2005; Shin & Ryu, 2006). An environment with abundant teaching materials allows children to choose at will, thereby positively affecting children’s play and activity preferences (Jeon & Choi, 2016). By contrast, a lack of activities, teaching materials, and interesting learning areas prepared by the teacher in the classroom may negatively impact children’s social behaviors (Obaki, 2017). As such, the quality of the environment of ECE institutions affects children’s cognitive, social, and emotional development and play behaviors.

Focusing on the positive impacts of the environment on the members in that environment, the Korean government has considered the educational environment as an important factor in its education policy. The Ministry of Education has promoted the spatial re-structuring project by organizing the School Environment Innovation Promotion Team since March 2019 (Lee, 2019). Considering that the uniform, one-way educational environment does not meet the emotional and aesthetic needs of students and the various spaces required for future education, the spatial re-structuring project reflects the needs of students, teachers, and local communities with regard to the educational environment. It emphasizes that the students should directly participate in the design of the school environment in connection

with the curriculum. Through this, the students will have a sense of ownership of the school and grow as democratic citizens who can use and take good care of the community space while simultaneously attaining educational effects, such a sense of space perception, artistry, problem-solving ability, and integrated thinking ability between science and art.

Innovation in the educational environment is also taking place at the ECE level. In 2019, Korea revised the national ECE curriculum in such a way that children and play were prioritized. This led to a change from a teacher-centered curriculum that focused on activities pre-planned by teachers to a play-oriented curriculum that centered on child-led play (Ministry of Education & Ministry of Health and Welfare, 2019). The Ministry of Education and the Ministry of Health and Welfare (2019) simplified the contents of the national-level curriculum and explained in detail that it is not about what teachers should teach but what children should learn through experience. In particular, the revised curriculum proposed revising the number, type, and operation of fixed learning centers to activate play led by children and let children play freely. Since children interact with the environment around them to start playing, the composition of the educational environment, especially the play environment, is important because the children should experience the curriculum through play by themselves. In this study, 'play environment' is specifically used to uncover the specific characteristics of environment that support young children's play. To this end, the play environment is defined as all materials and operating conditions for child-initiated play used to support and promote children's play.

Notably, the educational environment has been included as a condition for distinguishing high-quality ECE. This is evident in the indicators of the evaluation system for the quality management of ECE institutions in many countries. In Korea, a series of areas are specifically used in evaluating the indicators of kindergartens and childcare centers (Korea Childcare Promotion Institute, 2020). The educational environment is also part of the NAEYC Early Learning Program Standards and Criteria (2016) and the National Quality Framework (2020) presented by the Australian Children's Education & Care Quality Authority (ACECQA). These two evaluating systems have been working efficiently since 1985 for NAEYC and 1994 for ACECQA and adopted widely for researching education quality in ECE (Kim & Park, 2018). Both emphasized that there should be indoor and outdoor play areas that have appropriate sizes, are convenient to use, contain hands-on

materials, and cater to the interests of young children.

The guidelines for creating and evaluating an educational environment for high-quality ECE are very important. However, the indicators mainly focus on checking the elements necessary to create a high-quality environment for young children (Kim et al., 2017). Thus, guidelines for constructing high-quality educational environments especially play environments, that go beyond emphasizing the establishment of rules and standards are needed.

The ACECQA (2020) underscored that the environment should empower children through play and foster the ability to explore and learn independently through the National Quality Framework. An environment that supports learning, according to the ACECQA, should boost the emerging interests, inner creativity, and curiosity of children, reflect individual cultures, abilities, and learning styles, as well as recognize them as active learners and decision-makers. However, qualitative guidelines on what kind of environment should be made for these objectives to be achieved are limited.

Bergen et al. (2008) suggested the points to consider in constructing an educational environment for a play-based curriculum. It is noteworthy that the qualitative aspects of the educational environment include the aesthetic level of the environment itself, which should be high enough to make the children living in it feel good. Moreover, various objects and materials should be provided, and the children should be able to use them freely. They also pointed out that it is necessary to provide an environment that supports children's growth and learning. In other words, children should be provided with novelty and familiarity, simplicity and complexity, and quietness and vitality in a balanced way in the educational environment.

Kim et al. (2017) summarized the characteristics of an excellent educational environment: it gives comfort to young children, enables child-initiated learning, and fosters aesthetic sensitivity and creativity. Curtis and Carter (2008) suggested that to improve the curriculum through the environment, it is necessary to present the educational materials in such a way that children can explore them extensively to incite interest and motivation.

Creative problem-solving experiences are expanded when young children create classroom spaces flexibly during free play (Kwon, 2019). The imagination is richly expressed by using the play materials in an integrated way (Yoo, 2020). A high-quality

early childhood program provides a safe and nurturing environment. Safe and nurturing environment of ECE institutions has a positive effect on young children's emotional stability by providing with comfort. In addition, an educational environment with beautiful colors, landscaping, and pictures, as well as a fine aesthetic with harmonious lighting and color schemes has a significant effect on the social and emotional abilities of young children (Yoo & Sim, 2014). To promote early childhood play and learning, ECE institutions should be equipped with a high-quality environment. However, there is a dearth of studies focusing on the qualitative characteristics of a high-quality educational environment. Therefore, additional research is needed.

Children acquire ideas, interests, and motivation to play in the environment that surrounds them. Teachers should provide an environment that promotes play and supports learning by children, yet they lack concrete ideas about what elements need to be changed and how to undertake these changes in a space that has already been pre-determined in shape, size, and structure (Lim et al., 2021). Therefore, the purpose of this study is to examine early childhood teachers' perceptions of importance and performance with respect to the qualitative characteristics of the ECE environment. The specific research questions are as follows:

Research Question 1. What is the difference between early childhood teachers' perceptions of the importance and performance of the play environment?

Research Question 2. What are the items that early childhood teachers need to improve regarding the play environment?

Method

This exploratory study utilized the online questionnaire to measure the early childhood teachers' perceptions of the importance and performance of the play environment.

Research Subjects

In order to analyze early childhood teachers' perceptions of the importance and

performance of the play environment, an online questionnaire was distributed to teachers working in kindergartens and childcare centers located in Seoul and Gyeonggi Province, Korea. A total of 277 copies of the distributed questionnaire were collected and used for final data analysis. Table 1 shows the general backgrounds of the early childhood teachers selected for the study.

Table 1. *General Background of the Study Subjects (N=277)*

<i>General Background</i>		<i>Frequency (%)</i>
Teachers' ages	Under 24	33(11.9)
	25 to 29	90(32.5)
	30 to 34	70(25.3)
	35 to 39	37(13.4)
	over 40	47(16.9)
Ages of children they are in charge of	3	87(31.4)
	4	82(29.6)
	5	85(30.7)
	Mixed-age class	23(8.3)
Education	Other than college/university	3(1)
	Graduate 2- to 3-year college	72(26)
	Graduate 4-year university	130(47)
	Graduate school	72(26)
Years of teaching	Less than 2 years	59(21.3)
	3 to 4 years	53(19.1)
	5 to 10 years	101(36.5)
	Over 11 years	64(23.1)
Type of institution	Kindergarten	191(69)
	Childcare center	86(31)

Research Tools

A questionnaire was constructed based on the “Play Environment Checklist that Supports Early Childhood Experiences” from the Ministry of Education and the Daejeon Metropolitan Office of Education (2020b). The checklist is a reorganization of the items

related to the categories and details of the play environment that Kim et al. (2017) suggested for realizing the qualitative characteristics of an excellent educational environment in educational settings (See Table 2).

Table 2. *Questionnaire on the Importance and Performance of the Play Environment: Composition and Reliability*

<i>Sub-factor</i>	<i>Number of Items</i>	<i>Item</i>	<i>Reliability(Cronbach's α)</i>		<i>Explanation</i>
			<i>Importance</i>	<i>Performance</i>	
General background	5		-	-	Teachers' age, Age of children they are in charge of, Education, Teaching experience, Type of institution
Environment giving comfort	6	1-1, 2, 3, 4, 5, 6	.749	.778	Questions about environmental characteristics that allow children to play with a comfortable body and mind
Environment supporting child-initiated learning	7	2-1, 2, 3, 4, 5, 6, 7	.862	.874	Questions about environmental characteristics that make children want to know what it is, find an appropriate medium to express their thoughts, and express them in various ways
Environment fostering aesthetic sensitivity	8	3-1, 2, 3, 4, 5, 6, 7, 8	.907	.893	Questions about environmental characteristics that motivate children to be interested in, explore, and learn about aesthetic sensibility
Environment fostering creativity	4	4-1, 2, 3, 4	.785	.782	Questions about environmental characteristics that children can generate new ideas while looking at and responding to familiar environments from various perspectives.
Total	30		.940	.948	

The content validity of the questionnaire was verified by five professors from the Department of Early Childhood Education and one teacher with more than 10 years of experience when the questionnaire was made at first in 2020. For this study, two professors in Department of Early Childhood Education and the three students from masters and doctoral programs, and three teachers with more than 10 years of experience examined the validity of the items. Finally, the questionnaire with 30 items in four sub-factors was adopted without any changes.

Research Procedure

A preliminary study was conducted from October 4, 2021, to October 8, 2021 targeting 10 early childhood teachers with characteristics similar to those of the research subjects. After receiving feedback on the overall composition of the questionnaire, the difficult-to-understand parts of each question were corrected. The entire study was conducted from October 18, 2021 to October 29, 2021. Researchers explained the purpose of this study to former students who work as teachers at kindergartens or childcare centers using Social Networking Service (SNS) and asked them to participate in the online survey. Through this process, 277 early childhood teachers were recruited. We sent out the URL to the recruited teachers including the consent form on the first page of the online survey. If the teachers clicked ‘agree to participate’, the survey was started.

A 5-point Likert scale, ranged from 1 (strongly disagree) to 5 (strongly agree) was used in order to measure the perceptions of early childhood teachers regarding the importance and performance of play environment.

Data Analysis

The data collected in this study were analyzed using SPSS 28.0. The mean and standard deviation of importance and performance for each area and item were calculated. In addition, a t-test was performed to identify the areas and items with significant differences in the early childhood teachers’ perceptions between the importance and performance of the play environment. Matilla and James’ (1977) “Importance-Performance Analysis (IPA)”

method was applied to derive the priority of a practical strategy to reduce the difference between the importance and performance of the play environment. The IPA measures the importance and performance of each element, compares and analyzes them, displays them in a two-dimensional chart, and assigns meanings to the positions according to values. As shown in the Figure 1, there are four quadrants in the IPA. Quadrant 1 is the area with high importance and performance where the current situation can be maintained. Quadrant 2 is the area where importance is high but performance is low, that is, the area where intensive improvement is needed. Quadrant 3 is the area requiring gradual improvement with both importance and performance are low. Quadrant 4 is the area that needs to avoid excess where importance is low but performance is high.

Importance	High	Intensive improvement Quadrant 2 (high importance but low performance)	Sustain Quadrant 1 (high importance and performance)
	Low	Gradual improvement Quadrant 3 (low importance and performance)	Avoid excess Quadrant 4 (low importance but high performance)
		Low	High

Figure 1. *IPA Model*

Results

Differences in Early Childhood Teachers' Perceptions Between the Importance and Performance of the Play Environment

In order to analyze the difference in the perceptions between the importance and performance, t-test was conducted.

Table 3. *Difference Between Importance and Performance by Area of the Play Environment*

<i>Play Environment</i>	<i>Importance</i>	<i>Performance</i>	<i>Difference Between Importance and Performance</i>	
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>t</i>
Environment giving comfort	4.71(.35)	4.21(.60)	.50(.53)	16.186***
Environment supporting child-initiated learning	4.67(.41)	3.95(.69)	.72(.64)	19.649***
Environment fostering aesthetic sensitivity	4.49(.55)	3.73(.78)	.76(.70)	18.566***
Environment fostering creativity	4.56(.51)	3.83(.79)	.73(.73)	17.281***
Total	4.61(.39)	3.93(.64)	.68(.57)	20.449***

*** $p < .001$

Table 3 shows the results of the analysis of early childhood teachers' perceptions between the importance and performance of the play environment by area. The early childhood teachers perceived the importance of the play environment ($M=4.61$, $SD=.39$), indicating their high awareness of the benefits bestowed by the play environment. However, the mean score of the performance of the play environment was only 3.93 ($SD=.64$), indicating a difference in their perceptions of the importance and performance of the play environment ($M=.68$, $SD=.57$). As shown in Table 3, The t-test results showed significant differences between the importance and performance in all areas, performance being statistically lower than importance ($p < .001$). Notably, the difference between importance and performance was highest in the area, "environment fostering aesthetic sensitivity."

Differences in Early Childhood Teachers' Perceptions Between Importance and Performance of the Play Environment by Item.

The difference in the early childhood teachers' perceptions between the importance and performance of the play environment by item is shown in Table 4. There was a significant difference in "environment giving comfort" in all items ($p < .001$). Notably, the item with a large average difference between importance and performance was "Organize daily routine in a relaxed manner so that children can feel comfortable" ($M = .61$, $SD = .89$).

Table 4. *Difference Between Importance and Performance of "Environment Giving Comfort"*

<i>Item</i>	<i>Contents</i>	<i>Importance</i>	<i>Performance</i>	<i>Difference Between Importance and Performance</i>	
		<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>t</i>
1	Through the window, the child can feel the light anytime, anywhere.	4.64(.58)	4.28(.85)	.37(.80)	7.938***
2	You can adjust the light to suit the time, place, and activity the child is doing.	4.55(.70)	3.98(1.03)	.57(.91)	10.865***
3	Children can experience nature inside and outside the classroom and feel comfortable in it.	4.78(.48)	4.23(.83)	.55(.78)	12.067***
4	There is a relaxed atmosphere throughout the institution (kindergarten, childcare center).	4.77(.44)	4.37(.72)	.41(.66)	10.600***
5	Organize daily routine in a relaxed manner so that children can feel comfortable.	4.71(.51)	4.10(.94)	.61(.89)	11.856***
6	Daily routines can be flexibly changed according to needs so that children can feel comfortable.	4.81(.42)	4.34(.85)	.47(.79)	10.242***

*** $p < .001$

Table 5. *Difference Between Importance and Performance of "Environment That Supports Child-initiated Learning"*

<i>Items</i>	<i>Contents</i>	<i>Importance</i>	<i>Performance</i>	<i>Difference Between Importance and Performance</i>	
		<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>t</i>
1	Provide playtime that is long enough for young children to engage in serious play.	4.85(.40)	4.16(.86)	.69(.82)	14.461***
2	Provide materials with various characteristics to motivate children to explore.	4.68(.54)	3.87(.89)	.81(.85)	16.458***
3	New materials are provided periodically to motivate children to explore.	4.71(.51)	4.03(.85)	.68(.83)	14.234***
4	Familiar materials are presented in a new way to motivate children to explore.	4.62(.59)	3.82(.94)	.80(.89)	15.725***
5	Provide materials with an infinite number of ways to use to motivate children to explore.	4.55(.64)	3.88(.89)	.67(.85)	13.593***
6	Provide play materials by presenting it in a variety of ways in order to motivate children to explore and use them.	4.56(.66)	3.70(1.08)	.86(.99)	14.801***
7	Promote children's exploration and learning by naturally presenting information or materials related to children's play.	4.74(.48)	4.18(.84)	.56(.76)	12.660***

*** $p < .001$

Table 5 shows the difference between the importance and performance of the area “environment supporting child-initiated learning.” It also demonstrates a significant difference between importance and performance in all items ($p<.001$). The item with a large average difference in importance and performance in “environment supporting child-initiated learning” is “providing play material by presenting it in a variety of ways in order to motivate children to explore and use them” ($M=.86$, $SD=.99$).

Table 6 shows the difference between the importance and performance of “environment fostering aesthetic sensibility.” It also demonstrates that there is a difference in the importance and performance in all items of “environment fostering aesthetic sensitivity” ($p<.001$). The item with a large difference between importance and performance is “Plants are arranged in a balanced and harmonious way in the classroom so that the beauty of natural objects can be discovered” ($M=.97$, $SD=1.03$). The item “Furniture size, shape, color, material, etc. can be presented in various ways so that children can feel the aesthetic sense through furniture” has the second-largest difference between importance and performance.

Table 7 shows the results of analyzing the differences between the importance and performance of “environment fostering creativity.” It also demonstrates significant differences between importance and performance in all items of “environment fostering creativity” ($p<.001$). Notably, the item with a large average difference in importance and performance is “use the potential space created through furniture to see a familiar space with a new perspective, so that the child can change the space proactively and creatively” ($M=.91$, $SD=1.03$).

Table 6. *Difference Between Importance and Performance of "Environment That Fosters Aesthetic Sensitivity"*

<i>Items</i>	<i>Contents</i>	<i>Importance</i>	<i>Performance</i>	<i>Difference Between Importance and Performance</i>	
		<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>t</i>
1	Children can experience various properties of color, such as hue, brightness, and saturation, in a natural environment.	4.48(.69)	3.70(1.01)	.78(.91)	14.866***
2	The colors used in the educational environment and play materials harmonize aesthetically.	4.44(.71)	3.76(.98)	.68(.90)	13.117***
3	Various natural objects are properly used together with play materials to stimulate children's interest.	4.64(.64)	4.08(.96)	.56(.89)	10.981***
4	Plants are arranged in a balanced and harmonious way in the classroom so that children can discover the beauty of natural objects.	4.52(.67)	3.55(1.14)	.97(1.03)	16.132***
5	Furniture size, shape, color, material, etc. can be presented in various ways so that children can feel the aesthetic sense through furniture.	4.28(.89)	3.40(1.12)	.88(1.06)	14.319***
6	By exhibiting children's works in a specific space, children can perceive the relationship between the space and the work to experience various expressions.	4.56(.62)	3.80(1.07)	.76(1.01)	13.013***
7	Through the exhibition, where the arrangements of children's works, such as direction, distance, and height, can be adjusted, children can feel the movement, change, vitality, and mobility of the work.	4.49(.68)	3.76(.96)	.73(.92)	13.729***
8	Artworks with common materials and techniques are displayed together, so that children can experience how their work and the work of others harmonize with each other and what effect they have.	4.48(.68)	3.82(1.02)	.66(.89)	12.836***

*** $p < .001$

Table 7 *Difference Between Importance and Performance of “Environment That Fosters Creativity”*

<i>Items</i>	<i>Contents</i>	<i>Importance</i>	<i>Performance</i>	<i>Difference Between Importance and Performance</i>	
		<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>t</i>
1	The indoor and outdoor spaces are arranged so that children can move freely from one place (area) to another (area).	4.67(.55)	4.17(.91)	.50(.83)	.834***
2	Fostering children’s creativity by allowing them to see familiar materials from a new perspective, such as allowing objects to be used for purposes other than their intended purpose.	4.70(.50)	3.91(.95)	.79(.88)	.883***
3	Utilizing the potential space created through furniture allows children to change the space proactively and creatively by looking at the familiar space with a new perspective.	4.41(.79)	3.50(1.11)	.91(1.03)	1.030***
4	By changing the direction or method of placing the existing storage and using it anew, the familiar storage space can be viewed from a new perspective to give creative inspiration to young children.	4.46(.75)	3.73(1.05)	.73(.96)	.957***

*** $p < .001$

Items Requiring Improvement in the Play Environment

As demonstrated in Figure 2, the area with high importance and performance, where the current situation can be maintained (quadrant 1), was “environment giving comfort.” The areas requiring intensive improvement (quadrant 2) were “environment supporting child-initiated learning” and “environment fostering aesthetic sensitivity.” The area requiring gradual improvement (quadrant 3) was “environment fostering creativity.”

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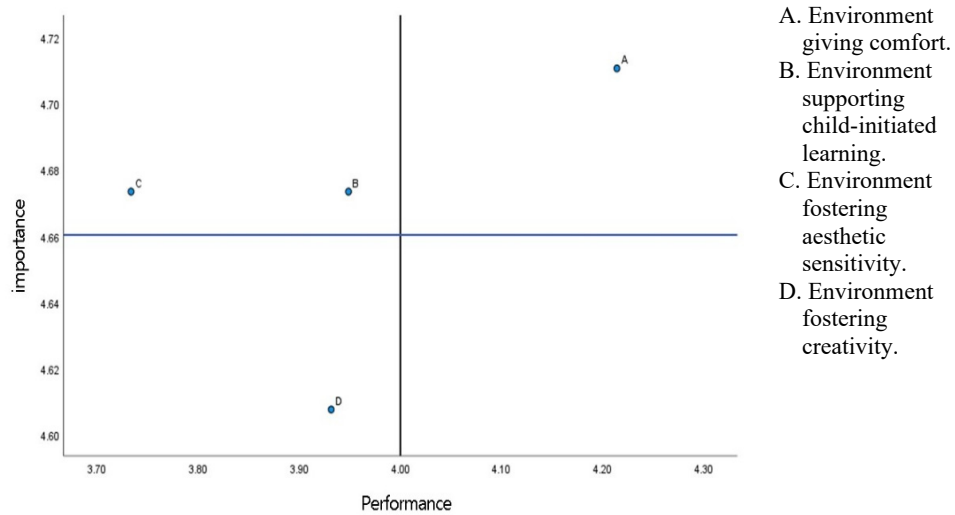


Figure 2. IPA Results by Area for the Play Environment

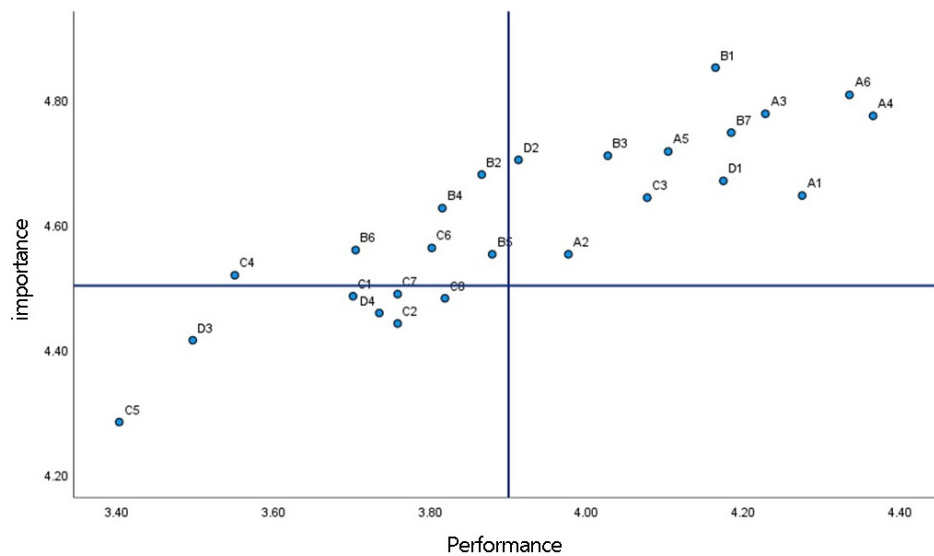


Figure 3. IPA Result for Each Item in the Play Environment

Figure 3 shows the results of the IPA and details of the items in the play environment that require intensive and gradual improvements. In the second quadrant, which is an area requiring intensive improvement with high importance but relatively low performance,

there are four items under “environment supporting child-initiated learning” and two items under “environment fostering aesthetic sensitivity.” In the third quadrant, which requires gradual improvement as both the importance and performance of the play environment are low, there are five items under “environment fostering aesthetic sensitivity” and two items under “environment fostering creativity.”

Table 8. IPA Analysis Result for Each Item in the Play Environment

<i>Quadrant</i>	<i>Environment</i>	<i>Item</i>
Intensive improvement (quadrant 2)	B. Environment supporting child-initiated learning	2 Provide materials with various characteristics to motivate children to explore.
		4 Familiar materials are presented in a new way to motivate children to explore.
		5 Provide materials with an infinite number of ways to use to motivate children to explore.
		6 Provide play materials by presenting them in a variety of ways to motivate children to explore and use them.
	C. Environment fostering aesthetic sensitivity	4 Plants are arranged in a balanced and harmonious way in the classroom so that children can discover the beauty of natural objects.
		6 By exhibiting children’s works in a specific space, children can perceive the relationship between the space and the work and experience various expressions.
Gradual improvement (quadrant 3)	C. Environment fostering aesthetic sensitivity	1 Children can experience various properties of color, such as hue, brightness, and saturation, in a natural environment.
		2 The colors used in the educational environment and play materials harmonize aesthetically.
		5 Furniture size, shape, color, material, etc. can be presented in various ways so that children can feel the aesthetic sense through the furniture.
		7 Through the exhibition, where the arrangement of children’s works such as direction, distance, and height can be adjusted, children can feel the movement, change, vitality, and mobility of the work.
		8 Artworks with common materials and techniques are displayed together, so that children can experience how their work and the work of others harmonize with each other and what effect they have.
	D. Environment fostering creativity	3 Utilizing the potential space created through furniture allows children to change the space proactively and creatively by looking at the familiar space with a new perspective.
		4 By changing the direction or method of placing the existing storage and using it anew, the familiar storage space can be viewed from a new perspective to give creative inspiration to young children.

Table 8 summarizes the items that require intensive and gradual improvements in the play environment by applying the IPA method.

The areas that need to be intensively improved to provide a quality play environment (quadrant 2) include "environment supporting child-initiated learning" and "environment fostering aesthetic sensibility." The third quadrant, an area requiring gradual improvement, includes "environment fostering aesthetic sensitivity" and "environment fostering creativity."

Discussion

The purpose of this study is to investigate early childhood teachers' perceptions of the importance and performance of the play environment in ECE. The results of this study suggest necessary support and improvement points to enrich the qualitative characteristics of the play environment.

First, as a result of examining the differences in the importance and performance levels of the play environment as perceived by early childhood teachers, importance was found to be significantly higher than performance in all areas. The results appear to be in line with the study of the Ministry of Education and the Daejeon Metropolitan City Office of Education (2020c), which investigated the importance and performance of teachers in the implementation of a child- and play-centered curriculum. The study showed that while the importance that teachers accord time, space, and material support for a play-centered curriculum is high, it is very low in terms of performance. This means that although early childhood teachers think the play environment is important, their actual performances do not equate to their recognition. The manifested difference in teachers' perceptions of the importance and performance of the play environment in this study underscores the necessity of determining what they are doing well for the play environment, what needs to be improved, and how to improve it.

The study unveiled the areas that need to be intensively improved and the areas that require gradual improvement in order to provide a quality play environment. First, as a result of performing an IPA by play environment area, the areas that need intensive

improvement were found to be “environment supporting child-initiated learning” and “environment fostering aesthetic sensitivity.” The two areas are of high importance but low performance, so they require the most focused effort to improve. For “environment supporting child-initiated learning,” the items belonging to this area that need intensive improvement were those that provoke children’s motives for exploration, namely, “providing materials with various characteristics,” “presenting familiar materials in a new way,” “providing materials with unlimited usage,” or “arranging the same play materials in a different way or presenting them in various ways.” Our findings show that early childhood teachers are insufficient in presenting or arranging materials for children’s active explorations, as supported by other scholars (Kang, Song & Kim, 2019; Kim, Park & Kim, 2014).

Curtis and Carter (2008) propose to stimulate children’s interest and motivation to improve the curriculum through educational materials. After fully understanding the characteristics of the materials, the children can meaningfully connect them with what they already know and use the materials intentionally to represent them in ways such as play. This is consistent with the direction pursued by the newly revised national-level early childhood curriculum of Korea. In the 2019 revised Nuri curriculum, it was emphasized that children play and learn proactively. Teachers should provide adequate materials so that children can immerse themselves in play and enjoy quality play; they should also support children in actively exploring and utilizing learning materials (Ministry of Education & Daejeon Metropolitan Office of Education, 2020a). It is worth mentioning that teachers need to provide a variety of materials at appropriate times to facilitate children’s active participation in play and to motivate them.

“Environment fostering aesthetic sensibility” was shown to be an area that needs intensive improvement. This result supports the study of the Ministry of Education and Daejeon Metropolitan City Office of Education (2020c) that investigated early childhood teachers’ perceptions of the importance and performance of a child- and play-centered curriculum. Although the importance of providing a quality environment is highly recognized, performance is relatively low. On the other hand, the physical environment standards for childcare centers in Korea only consider the development and interests of children at a minimum level (Korea Childcare Promotion Institute, 2020). Moreover, it is

difficult to judge the aesthetics of indoor and outdoor spaces. Therefore, standards for aesthetic space are needed to improve the quality of the play environment.

Furthermore, the IPA results for each play environment area showed that the area requiring gradual improvement with relatively low importance and performance was "environment fostering creativity." Creativity is developed from early childhood and is influenced by the surrounding environment. Therefore, ECE institutions are a major factor influencing creativity for young children who have been attending ECE institutions from an early age. The 2019 revised Nuri curriculum emphasizes the importance of space utilization compared to the previous curriculum (Kong & Lee, 2020), so continuous support and improvement are needed to understand and implement the meaning of space. However, participants in this study had difficulties in using space creatively. Although teachers recognize that the learning centers can be freely configured as a play space, they may be exposed to stereotypes about the learning centers and the risk of safety accidents, making it challenging to utilize the space (Kim, 2021).

McCoy and Evans (2002) claim that space promoting social interaction can have a positive effect on creativity. In other words, a space that promotes creativity is a space composed of furniture and props that can communicate and cooperate, a space made of wood, and a space with a window showing the natural environment (Warner & Myers, 2010). There is a need to ensure safe and play-oriented activities for children and, consequently, support creative space organization. Early childhood teachers are the agents of creative use of space. Since the teachers play a significant role in constructing a creative environment and supporting play, professional workshops and trainings are needed

Considering that our understanding of the characteristics of a high-quality play environment is limited, the findings offer insights into how teachers perceived the importance and performance of the play environment and what specific items need to be improved and enhanced. The results can also provide valuable data for establishing a framework for the kind of action plan to further activate children's play. The limitation of this study should be recognized given the heavy focus on the quantitative data. In the future, additional research incorporating qualitative data is needed to explore the perceptions of ECE teachers on the play environment.

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