



Examining Children's Art Products and Determining Their Aesthetic Judgment in a Preschool Classroom Where Learning Centers were Used*

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Abstract

The aim of this study was to examine children's art products and determine their aesthetic judgment in a preschool classroom where learning centers were used. The participants of this study were 19 children aged 60 to 72 months, enrolled in Ankara University Practice School for Preschool Education (1) and Child Club in 2011-2012 academic year. In the group, 10 children were male and 9 were female. Furthermore, qualitative data were collected from 17 parents, two of whom had twins. Qualitative and quantitative methods were used together in the study, based on a pretest-posttest model, involving a single group. The data-collecting instruments were Taylor-Helmstadter Pair Comparison Scale of Aesthetic Judgment, Product File Evaluation Form developed by the researcher and interview forms for children and parents. The art products created by children were evaluated by experts in consideration of five criteria. According to their evaluation, children received the highest average scores for the formal quality of art products. There was a significant difference between pretest and posttest scores in the Scale of Aesthetic Judgment. The mean ranks and sums of test scores suggest that the difference is in favor of the posttest score. All children indicated that they liked the learning centers in the educational environment. The study reports the details of the reasons children mentioned for liking the learning environment. Moreover, all parents agreed that the learning environment had positive impacts on the development of children. The part of recommendations in this study outlines the need for and content of further studies required in the field.

Keywords: learning centers, preschool learning environment, aesthetic judgment, art products

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Öğrenme Merkezleriyle Oluşturulmuş Bir Okul Öncesi Sınıfında Çocukların Estetik Yargılarının Belirlenmesi ve Sanat Ürünlerinin İncelenmesi

Öz

Bu araştırmada öğrenme merkezleri kullanılarak oluşturulan bir okul öncesi eğitim sınıfında çocukların sanat ürünlerinin incelenmesi ve estetik yargılarının belirlenmesi amaçlanmıştır. Çalışmanın araştırma grubunu 2011-2012 Eğitim Öğretim yılında Ankara Üniversitesi Uygulama Anaokulu (1) ve Çocuk Kulübüne devam eden 60-72 aylık 19 çocuk oluşturmaktadır. Çocuklardan 10’u erkek 9’u kızdır. Ayrıca nitel verilerin elde edildiği ikisi ikiz çocuk sahibi olan 17 ebeveyn de araştırma grubunda yer almıştır. Araştırmada nitel ve nicel yöntemler bir arada kullanılmıştır. Araştırmanın deseni tek gruplu ön test-son test modelidir. Veri toplama aracı olarak Taylor-Helmstadter Çift Karşılaştırmalı Estetik Yargı Ölçeği, araştırmacının oluşturmuş olduğu Ürün Dosyası Değerlendirme Formu, çocuk ve ebeveyn görüşme formu kullanılmıştır. Araştırmadan elde edilen bulgulara göre sınıf ortamı düzenlendikten sonra çocukların yapmış olduğu sanat ürünleri uzmanlar tarafından beş ayrı ölçüte göre değerlendirilmiştir. Bu değerlendirmeye göre çocukların sanat ürünlerinin biçimsel özellikler yönünden en yüksek puan ortalamasına sahip olduğu görülmüştür. Çocukların Estetik Yargı Ölçeği’nden aldıkları puanlar arasında ise anlamlı bir fark bulunmuştur. Fark puanlarının sıra ortalamaları ve toplamları dikkate alındığında, son test puanı lehine olduğu görülmüştür. Çocukların eğitim ortamına ait görüşleri incelendiğinde; tamamının öğrenme merkezlerini sevdiği yönündeki görüşleri dikkat çekmiştir. Bu görüşlerin gerekçelerine ait bilgiler de ayrıntılı olarak verilmiştir. Ebeveynlerin de tamamının eğitim ortamının çocuklarının gelişimlerini olumlu doğrultuda etkilediği yönünde görüş bildirdikleri görülmüştür. Araştırmanın öneriler kısmında ise bir okul öncesi eğitim ortamının nasıl oluşturulabileceğine dair önerilerde bulunulmuş, daha farklı çalışmaların gerekliliği ve neler yapılabileceği dile getirilmiştir.

Anahtar Sözcükler: öğrenme merkezleri, okul öncesi öğrenme ortamı, estetik yargı, sanat ürünleri

Introduction

Preschool education process lays the foundations of other stages of human life. This process is also defined as the period when development in personality and other areas are at the most rapid pace. Preschool education is a very important stage in the socialization process of children, and hence should be offered in view of children's age, individual characteristics and needs (Güven & Azkeskin, 2010).

Scholars provide varying opinions on what falls under the category of fundamental needs of preschool children; however, there is more or less consensus on primary needs. These needs are listed as care, nutrition, love and affection, sense of safety, motion, adult support, self-knowledge and self-actualization, freedom, spending time and playing with other children and an environment that supports children's creativity and develop their aesthetic sense. At preschool age, it is nevertheless important to develop creativity and aesthetic sense of children and enable them to take part in art activities in a clean and tidy environment, in addition to meeting their primary needs. The development of aesthetic values such as music, painting and environmental perception in children mostly depends on the pleasure and preference of parents and other adults in close vicinity. Just like the sense of taste, aesthetic senses develop in early ages on the basis of the cultural setting where the child grows up. Furthermore, children need to express themselves, to use materials around them in different ways and to dream, making use of words. There is a need to provide opportunities and create a favorable environment for these needs (Oktay, 2000).

Children's preschool experience and environment constitute the basics of their future life. Research has shown that brain responds to early experiences and the environment has a significant effect on brain development. Children are born with a specific genetic potential. They are able to make ultimate use of this potential if the environment in which they live supports their development substantially. Early childhood education may play a positive role in child development by providing children with a suitable learning environment rich in stimulants (Güven & Azkeskin, 2010).

This study has set out to examine children's art products and determine their aesthetic judgments in a preschool education classroom where learning centers were used, and to make recommendations according to children's and parents' viewpoints about the learning centers.

Aim of the Research

The aim of this study was to examine children's art products and determine their aesthetic judgments in a preschool classroom where learning centers were used. The answers to the following questions were sought in the framework of above-mentioned general aim:

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- Does a preschool classroom where learning centers were used have an effect on children’s aesthetic judgments?
- How are the art products made by children in a preschool classroom where learning centers were used?
- What are children’s viewpoints on a preschool classroom where learning centers were used?
- What are parents’ viewpoints on a preschool classroom where learning centers were used?

Method

Research Design

The research is based on a pretest-posttest model, involving a single group, where qualitative and quantitative methods were used together. In this design, the effect of experimental procedure is tested with a single group. The measurements related to the dependent variable are obtained by pretest before the experiment and by posttest after the experiment by using same subjects and same measurement tools Büyüköztürk, Kılıç, Akgün, Karadeniz, & Demirel (2009).

Participants

The participants of this research comprised 19 children aged between 60 and 72 months, who were enrolled in the Practice Preschool and Child Club of Ankara University in 2011-2012 academic year. In the group, 10 children were male and 9 were female.

Furthermore, in the study, qualitative data were collected from 17 parents, two of whom had twins.

Data Collection

The research setting was designed by the researcher in a weekend by using learning centers. The setting was reorganized in a weekend in order to welcome children directly in a preschool classroom where learning center were used rather than making spatial changes in the presence of children. The setting comprised a total of six centers:

- Dramatic Play Center
- Manipulative Play and Block Center
- Reading Center
- Science Center
- Music Center
- Art Workshop

In designing the classroom environment, the researcher paid heed to early childhood education approaches and focused particularly on the aspects that were likely to contribute to the given environment and practices, and dealt especially with the aspects of material and classroom environment. While furnishing each center with specific materials, the researchers used objects collected from the nature, catalogues of various stores, all sorts of waste materials and purchased products, as well as the sources already available in the institution. The materials were placed on open shelves at children's height, in view of the Montessori education approach. Children were free to choose materials they used in their works. In all centers except the art workshop, there was one from each material in order to support children's social development by enabling them to talk to each other, wait their turn or make a compromise. Reggio Emilia approach also focuses on the accessibility of materials. Based on these approaches, the materials were displayed in transparent vessels on open shelves. Areas where children could work individually and collaboratively were designed when the classroom was divided into learning centers. An art workshop was designed in the classroom, as suggested by Reggio Emilia approach.

The products created in the art workshop were kept in files, and parents were involved in this process. The environment used in this study was designed in a way to support effective learning, as suggested in the HighScope approach. To this end, all sorts of natural materials, housekeeping tools and old household goods were used in learning centers. Tags were used to define and visualize learning centers and materials used in learning centers. The names of learning centers were emphasized frequently in communication with children to enable them to adapt to the environment. Natural and simple materials were used rather than plastic materials and electronic devices, as suggested in Waldorf pedagogy. The following materials were used in each learning center, in consideration of the educational approaches defined above:

Dramatic play center. Authentic/toy miniature household goods, various pieces of a playing house, costumes and accessories such as bags, hats and garments, a bed net hung from the ceiling, a puppet stage and various puppets,

Manipulative play and block center. Construction toys, puzzles, Lego-type toys, matching cards, wooden and plastic blocks, etc.,

Reading center. Colorful and illustrated short story books for children, books about the lives of famous artists, books related to recycling, use of waste materials and art activities, large books, board books, and armchairs placed in U form for children to sit comfortably,

Science center. Magnifying glasses in various sizes, bug boxes, natural materials (pine cones, various types of seeds, cotton, branches, seashells, etc.), measurements tools, experiment books, science cards, sandglass and other types of time measurement tools, organ models, teeth models, magnets, etc.,

Music center. Drum, drumsticks, castanets, rumba shaker, tambourine, finger cymbals, triangle, CD player and headphones,

Art atelier. Art atelier was launched in a separate cubicle in the classroom, which had already been used as the art room before this study. The cupboards higher than children were taken out of the room and replaced by open shelves at the height of children. The shelves were furnished with drawers and transparent boxes, in which various craft materials (sequins, beads, wiggle eyes, small waste materials), all sorts of reusable waste materials, paints (pastel crayons, watercolor, finger paints, marker pens, colored pencils), brushes in different sizes, painting aprons, scissors, glues, etc. were placed. In addition, there were materials such as large boxes and pieces of polystyrene boards, fabric scraps, and samples of curtain collections, different types of stones, packaging materials, bottles, seashells and leaves.

Before the study was carried out, parents of children were informed about the process. Permission was obtained from parents to include children in the study. Pretests were conducted in a quiet place other than the environment used for the study. The Scale of Aesthetic Judgment was administered to each child individually, and the replies of each child were recorded by the researcher. The children were then informed about each learning center in the classroom as well as the materials in the centers and how they are used. Observations were made during free play hours of children. Every day children had one hour for free playing, and this period was divided into two parts of 30 minutes. After the circle time every morning, each child was free to select a learning center. However, children were asked not to select the same center on two succeeding days in order to avoid that they did not use the same center every day. The work created by each child in the art workshop was photographed and kept in electronic files of children. At the end of one-month period, posttests were conducted and semi-structured interviews were made to get parents' and children's viewpoints about the process. Posttests were conducted at the end of the study.

Results and Discussion

This part, in view of the research aims, reports on the findings related to children's aesthetic judgments, works of art produced by children and children's and parents' viewpoints on the environment in the preschool education classroom where learning centers were used.

Findings Related to the Determination of Children's Aesthetic Judgments in the Preschool Classroom Where Learning Centers were Used

One of the aims of this research was to determine aesthetic judgment of children in a preschool classroom where learning centers were used. The Wilcoxon signed-rank test was conducted to determine children's aesthetic judgments, and the results are provided in Table 1.

Table 1

The Wilcoxon Signed-Rank Test Results by Pretest-Posttest Scores Obtained in the Scale of Aesthetic Judgment

Measurement	<i>N</i>	Mean rank	Rank sum	<i>z</i>	<i>P</i>
Negative Rank	0	.00	.00	3.74*	0.00
Positive Rank	18	9.50	171.00		
Equal	1				

The analysis results provided in Table 1 show that there is a significant difference between pretest and posttest scores of children in aesthetic judgment scale [$Z=3.74$; $p<.01$]. The rank means and sums of scores suggest that the difference is in favor of the posttest score. To offer a high-quality preschool education, it is required to design preschool environments according to pedagogical and architectural needs. The use of different education systems affects the environment where education is provided (Uysal, 2006). Kırıçoğlu (2002) contends that the aesthetic design of a classroom or workshop plays a reinforcing role in education. For Kırıçoğlu, at the very beginning of a study, the environment should be designed stimulatingly and the stimulating characteristic of the environment should be active. In such an exciting atmosphere, children find examples of any works they are likely to create and hence get to work enthusiastically. Children are born with the capability to explore their surroundings by senses. A non-stimulant environment is likely to blunt this capability. A high-quality learning environment is characterized by the co-existence of many factors. It requires functionality, arrangement and organization of the settings and harmony of all elements constituting the environment. Learning environment should be a place that addresses to multi-sensorial experiences (Branzi, Rinaldi, Vecchi, Petrillo, Bruner, Icaro, Sarti & Veca, 2003). In the light of this information, it may be concluded that learning centers with stimulating characteristics, addressing to senses of children, are expected to play a positive role in the development of their aesthetic judgments.

Findings Related to Art Products Created by Children After the Environment is Designed

During one-month period of learning, each child produced five to twelve art products. Five products of each child were chosen randomly in order for experts to evaluate equal number of works in each child’s product file. The experts were asked to evaluate the works of each child based on the Product File Evaluation Form developed by the researcher. The following findings were obtained as a result of the evaluation of works produced by children.

Table 2 provides the average scores given by experts for products evaluated based on predefined criteria:

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Table 2
Average Scores for Art Products

Sub-dimension	Average score	Standard deviation	Minimum value	Maximum value
Formal Qualities	3,32	0,20	2,76	3,64
Originality-Creativity	3,12	0,21	2,76	3,56
Knowledge-Skills	3,23	0,21	2,88	3,64
Rhythm	2,87	0,21	2,48	3,28
Details	3,02	0,29	2,56	3,52

The works of children were evaluated by experts on the basis of five criteria in the product file evaluation form. Table 2 shows that rhythm had the lowest average score ($\bar{X}=2,87$) and formal qualities had the highest average score ($\bar{X}=3,32$) in the evaluation. The scores of other criteria were $\bar{X}=3,23$ for knowledge and skills, $\bar{X}=3,12$ for originality and creativity and $\bar{X}=3,02$ for details. When children are provided with different kinds of interesting materials and with the chance to select and use these materials freely, they are supported to become creative individuals (Batic, 2014). Diversifying the materials available in art centers help children discover new artistic opportunities (Fox and Schirmacher, 2014). In the present study, the formal quality of children's works was better probably because of the use of numerous and various materials in the learning environment and providing children with the opportunity to choose materials in the production process.

Children's Viewpoints on the Preschool Classroom Where Learning Centers were Used

The third aim of the study was to identify children's viewpoints on the preschool education classroom where learning centers were used.

All children (f:19), who were in this preschool classroom where learning centers were used, liked and had positive viewpoints with regard to the learning centers in the education environment. Some selected statements are as follows:

C2 – I like spending time in centers.

C9 – I like more this design of our classroom.

C17 – I like very much the new design of our classroom. It is very beautiful now. I like the centers very much.

The reasons why children like the centers are provided in Table 3.

Table 3

The Reasons Why Children Like Learning Centers

Themes	<i>f</i>
There are lots of new materials in the centers	14
They have the chance to do whatever they want in the centers	10
The centers are entertaining	10
They have the chance to learn on their own in the centers	6
They have the chance to choose a different center every day	4
Parents like/find interesting what children do in the centers	2
Each has the chance to be in a different center at the same time	1
The materials in the centers are suitable for their developmental characteristics	1
They like sharing the materials in the centers with friends	1
They feel better in the centers	1

As seen in Table 3, the main reasons children mentioned for liking the learning centers are the variety and abundance of new materials, not found in the classroom previously (f:14). Some selected statements are as follows:

C15 – I like examining the stuff in the centers. I have not known some of these materials. They were not here previously; I did not like at all the old classroom. I like this design of the classroom.

C10 – We could not use the tape dispenser beforehand. Now we are allowed to use everything. New materials have come to the classroom. We can select and use whatever we want. I can get any materials in the art workshop and do whatever I want.

C7 – There are lots of new materials in the classroom. We can use all of them. We can use whatever we want.

C18 – There is a magnifying glass, a bug box there. We did not have them before.

The children mentioned that they liked the centers because they could do whatever they wanted there (f:10), found the centers entertaining (f:10), and had the chance to experiment, use materials and learn on their own in the centers (f:6). Some examples selected from the statements of children are as follows:

C2 – It is very funny to choose a play and get to the centers.

C7 – I feel good because I am free here. I choose a center. I can play whatever I want.

C19 – The centers are very entertaining... I made a sound enclosure here, it was very amusing. This place is so funny.

C4 – We can examine books on our own. We can use everything on our own in the art workshop. We do science on our own. I choose an experiment from the book. I check the pictures and get the materials I need on my own.

C9 – I used to have a lot of fun whenever I learned new things. Now I can learn on my own.

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Some children stated that they liked the centers because they were able to choose another center every day (f:4) and their parents liked the works of art they produced in the centers (f:2). Some examples selected from the statements of children are as follows:

C19 – I choose another center every day.

C13 – I am very happy when I spend time again in a center I like.

C4 – In the mornings, we all go to different centers.

C12 – My parents are very surprised by what I do here. We put the works I do here above the cupboard so that they are not damaged.

C14 – My mother adores what I do here.

Few children explained that they liked the centers because each had the chance to be in a different center at the same time (f:1), the materials in the centers were suitable for children’s development (f:1), they liked sharing the materials in the centers with friends and they felt good in the centers (f:1). The statements of children are as follows:

C11 – When the others are playing inside, we can do something else in the art workshop.

C12 – I am happy that I can reach the shelves in the art workshop.

C18 – I like sharing stuff with my friends when playing in the centers.

Given the developmental characteristics of six-year old children, preschool education allows them to learn and realize themselves. The opportunities provided to children in the educational environment enhance their curiosity and willingness to discover and explore. Children at this age are able to make their own decisions when solving problems. In line with their decisions, they develop interesting experiments and do not need adult support unless they run into a significant difficulty (Şen, 2007). In the present study, the children’s viewpoints on the educational environment overlap the developmental characteristics of six-year-old children. It is observed that, in the learning environment designed for this study, the children had increased curiosity, tried to explore their surroundings and work independently without adult support. The positive opinions regarding the centers mostly derived from the opportunity to work freely in the educational environment, opportunity to make free choices and new materials continuously added to the environment.

What some children (f:6) did not like in the educational environment is presented in Table 4.

Table 4

What Children Dislike in the Educational Environment

Themes	<i>f</i>
Students do not return the materials to their place in the learning centers	2
I am not able to choose the center I wish when I come to school late	2
Works produced in the centers get damaged until we take them home	1
Students damage the materials in the learning centers	1

As seen in Table 4, what disturbed children in the learning centers were their peers who did not take materials back to their place in the centers (f:2), not being able to choose the learning center they wished when they came to school late (f:2), the fact that their works became damaged until they took them home (f:1), and their peers who damage the materials in the centers (f:1). The relevant statements of children are as follows:

C1 – Sometimes my friends do not take toys back to their place. I get angry then.

C3 – I get upset when I cannot choose the center I like when I come to school late.

C3 – But I do not like it when my products break off until I go home.

C19 – I get furious when my friends harm the materials.

The negative opinions are related to not taking materials back to their place, not being able to choose a center, products being damaged until they are taken home and friends damaging the materials in the centers. Although these are mentioned as the cases that disturb children in the learning centers, they indicate that the children developed a sense of belonging to the educational environment, they disliked any harms to the environment and making a choice among centers was very important for children.

The data suggest that the most favorable center of children was the art workshop (f:5), which was followed by the dramatic play center (f:3) and the science center (f:3). Some examples selected from the statements of children are as follows:

C2 – I like most the art workshop and the science center.

C4 – The science center is very entertaining.

C5 – I like most the dramatic play center.

C17 – But I like most the art workshop because I like drawing.

C3 – I like doing experiments in the science center. I especially like doing experiments with balloons.

In her study titled “Children’s Perceptions of Preschool Education”, Yıldız (2003) found that children mostly perceived preschool as a place where they were engaged in activities and where there were rules. It was observed that children were able to tell the classroom rules easily and warn newcomers about how to act in the school.

Preschool children mostly give importance to toys in the school and tend to tell what they do in the school. Children taking part in the research had positive perceptions related to the school and qualified it as a very beautiful, beautiful and good place. It was seen that they had various reasons for describing the school environment as a very beautiful, beautiful and good place.

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Accordingly, the most frequent reason for liking preschool was playing and activities related to playing. This was followed by liking the school for learning, entertainment, love, garden and richness of the environment. The majority of children that took part in the research reported that they got bored most when they sat back and had nothing to do. Children also got bored when they were faced with communication problems, conflict, physical assault and loneliness. These findings support children's viewpoints about the learning centers.

Parents' Viewpoints on the Preschool Classroom Where Learning Centers were Used

The parents (f:19) of all children, who studied in this preschool education classroom where learning centers were used, had positive viewpoints with regard to the effects of learning centers on the development of their children. Some examples selected from their statements are as follows:

P14 – I think it had positive impacts on my son.

P9 – I believe it had positive impacts on interests and talent of my kid.

P11 – The classroom has become a more attractive setting for children.

P7 – My son was very excited and enthusiastic throughout this study. Every day he told what they did at school. He shared with us the details of each learning center.

P10 – He showed and told us everything in details. Now his always asks if there is anything we would throw away. Can you give this to me? Can I make this out of that?

P4 – My son has enhanced vocabulary after the centers you created in the classroom.

P8 – She learned recycling the materials that seem useless. She can even make various products out of these materials.

P14 – My kid now does not let us throw away boxes or packages at home and tells us he can use them to design new things.

P5 – She now started using her paints and art materials she had not used before.

P4 – He started making pictures, toys, puppets, etc., using waste materials at home.

P1 – He is always seeking to discover, develop, etc. new things.

P8 – The capability of designing new things provided her with enthusiasm and self-confidence.

P11 – She divided her room into centers, inspired by the organization in her classroom.

P13 – Her school motivation increased considerably. The changes in the setting have refreshed her interest in the school.

P9 – I believe that the environment you designed enabled my son to adapt more easily to school activities.

P8 – Particularly thanks to the reading center, she learned to protect books and use them more carefully.

General overviews of parents' viewpoints indicate that they had positive perceptions of the effects of learning centers on children's development. The changes they observed on children during the period of research are desired and positive. The rearrangements in the learning environment and children's use of this environment had impacts on children's life at home. This also provides implications regarding to which extent school education affects parents who are not present in the school environment, how children raise awareness of parents with regard to their talents and interests and what to do at home to motivate desired behaviors. Kaya and Gültekin (2002) found that parents are interested in and have cooperative approaches to the programs used in preschool education institutions. The majority of parents interviewed in the study indicated that children's participation in the preschool education program and activities would affect their children positively. In the present study, the awareness of parents were increased with the information provided about the study and the feedback they received from teachers and their children, which probably had reflections on their positive viewpoints.

In Berris and Miller's (2011) study, where the aim was to indicate the quality and importance of physical environment in preschool education, the researchers asked the opinions of educators and parents. Both educators and parents stated that the environment was important for the development of children. According to the participants, the preschool learning environment should be homely, inviting and bright, make children feel safe and encourage learning. In the present study, parents' positive perceptions of the educational environment suggest that the educational characteristics of the environment created for the purpose of this study are consistent with the literature.

Conclusion and Recommendations

Conclusion

This study was conducted to examine art products and determine aesthetic judgment of children in a preschool classroom where learning centers were used, with 19 children aged 60 to 72 months, enrolled in the Practice School for Preschool Education (1) and Child Club of Ankara University in 2011-2012 academic year.

In the group, 10 children were male and 9 were female. Furthermore, in the study, qualitative data were collected from 17 parents, two of whom had twins.

The research data were collected through Taylor-Helmstadter Pair Comparison Scale of Aesthetic Judgment, Product File Evaluation Form and child-parent interview forms. The analyses of data provided the following results:

There is a significant difference in the scale of aesthetic judgment scores before and after the classroom was redesigned. The mean ranks and sums of test scores suggest that the difference is in favor of the posttest score.

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The art products made by children after the classroom was redesigned were evaluated by experts in consideration of five criteria. According to the evaluation, children's products had the highest average scores in terms of formal quality and the lowest scores in terms of rhythm. Formal quality was followed by knowledge and skills, originality and creativity and details.

All children indicated that they liked the learning centers in the educational environment. The most common reason is that there was a great many of new materials that was worth of examining and using.

Children mentioned that they liked the centers because they were able to do everything they wanted, they found the centers entertaining and they had the chance to learn on their own in the centers. Some children stated that they liked the centers because they were able to choose a different center every day and their parents liked/found interesting the art products they made in the centers. Few children explained that they liked the centers because they had the chance to be in a separate center at the same time, the materials in the centers were suitable for children's development, they liked sharing the materials in the centers with friends and they felt good in the centers.

What children did not like in the learning centers were their peers who did not take materials back to their place in the centers, not being able to choose the learning center they wished when they came to school late, the fact that their works got damaged when they took them home, and their peers who damaged the materials in the centers.

Given the parents' viewpoints about children's development, it is worthy of note that all parents had positive perceptions with regard to the impacts of the learning centers on children.

The parents contended that the learning centers were most effective on language development of children. There was an acknowledgment that the learning centers affected motor and social emotional development equally, which is followed by cognitive development. Although small in numbers, some parents mentioned that the learning centers affected self-care skills of children. According to the parents, the learning centers had impact on the use of language for communication purposes. The other language-related effects of the centers were expressing what they listen to/watch in different ways, enhancing vocabulary and following syntactic rules in sentence formulation. The contributions of learning centers mentioned by the parents were as follows: redesigning objects to create new forms, drawing pictures by using different materials and using scissors in the field of motor development; expressing themselves creatively, developing self-confidence, preserving aesthetic values, self-motivation to complete a task, fulfilling responsibilities and expressing negative feelings appropriately in the field of social emotional development; concentrating on an object/condition/event, remembering what they perceive and producing solutions to problems in the field of cognitive development; and using their belongings cleanly and tidily and designing their living area appropriately.

Recommendations

Preschool education environments should be designed to be used flexibly. There is a need for cooperation among educators, families, administrators and architects to ensure that preschool institutions become safe and multi-functional environments that support children's developmental characteristics and improve their problem-solving skills and creativity.

For the purpose of this study, a single-group pretest-posttest model was used to collect data from a preschool classroom where learning centers were used. In further studies, experiment and control groups may be used to compare the differences between two groups.

In another study, it is possible to examine the developmental areas of children in a redesigned learning environment more systematically through structured and semi-structured observation forms.

This study is limited to six-year-old children. A larger study may concentrate on the educational environments of children aged 3 to 6 and collect opinions of different age groups on the educational environment.

In the present study, the learning environment of children was redesigned and the art works children produced in this environment were examined. Further studies are needed to examine comparatively the link between other activity products and various developmental areas of children.

There is a need to develop culture-specific scales that measure the physical characteristics of preschool education environments to evaluate the quality of educational environments.

The aspects of early childhood education approaches that are likely to contribute to our education system should be taken into consideration. The aspects such as educational philosophies, materials, classroom environment, teacher qualifications and classroom management may be discussed with teachers and integrated with current practices.

It is also suggested to develop methods of designing educational environments, material supply and functional use of educational environments by exchanging information with teachers and administrators.

Associate and undergraduate degree programs in preschool education may offer elective courses related to educational environments in addition to material development courses.

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