Early Children's Education Center with Play Space Concept in East Jakarta

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Abstract. The purpose of the research is to review the conduct of planning a Center Early Childhood Education with play space concept that creates environmental activities for children for review learning with play and supporting children's activity and characteristics. Early Children have a sense of curiosity and surrounding environment to know and explore. Playing is an effective way for kids and learning can be supporting the motion activity to increase kids and insights for kids to get to know their environment. The research was conducted with comparative studies, literature studies, and analysis. The results of the method were then applied as a concept play space Development Environment strategy in Early Childhood Education. (BCM)

1. Introduction

The expansion and equity of Early Childhood Education (PAUD) is one of the policy priorities of the Directorate for Early Childhood Education, Directorate General of Early Childhood Education, and Community Education. Therefore, the enactment of Act No. 20 Year 2003 concerning Early Childhood Education System (PAUD) (Article 28) shows the commitment of the Indonesian people to place early childhood education as an important part of preparing human resources in the future.

In addition, based on the strategic plan of the Ministry of Education and Culture together with the Directorate for Early Childhood Development in 2016 states that 2016 is the starting point for achieving the target of providing quality education, called the 2030 Educational Agenda for Early Childhood Education (PAUD) ensuring all boys and girl have access to quality development, care and pre-school education (PAUD) to ensure readiness to enter primary education and it is hoped that all children will develop optimally according to their respective potentials. The principle of PAUD in PAUD National Semiloka point C says that early childhood education needs to pay attention to the supporting factors that are designed and implemented oriented to the developmental needs and characteristics of children.

One factor is in the child's learning environment when doing activities in PAUD. PAUD needs to pay attention to facilities and medium as well as concepts that can support the activities of PAUD children who learn through playing with an environment that has educational elements. It can be seen that during play there is a significant change in motion in children, namely exploring, running, walking, traveling, and interacting with a concept of play space. Early childhood education center facilities need to pay attention to creative design concepts and facilities that support the needs of activities and characteristics children in learning by playing, socializing, and getting to know the surrounding environment with a play space that facilitates learning activities by playing. Based on the background raised, the formulation of the problem is how the application of the concept of play space in the Early Childhood Education
Center to support children's activities in learning by playing in accordance with the characteristics of children exploring, having curiosity, and interacting with the research objectives of producing a Children's Education Center Early age who has the concept of play supports the activities and character needs of children to learn and play by exploring, interacting and getting to know their environment by creating an effective learning environment for Early Childhood Education Centers that can make play space a child's learning environment.

The theoretical basis used in this study leads to the concept of play space that will be applied as an element of planning namely early childhood education implementation using principles that are oriented to the needs of children, learning and playing, creating a conducive environment to support children's activities and abilities, use integrated learning, develop a variety of life skills, use a variety of educational media and learning resources, develop children's skills and creativity. Besides the theory being considered is the principle of play space according to Aileen Shackell [1] a landscape architect who has more than fifteen years of experience in the field of open space landscaping, one of which is "play space" in his book entitled Design for Play: a guide to creating successful play spaces contains the theory of play space design principles that can create inspiring play spaces, enjoyable, and has challenges for children to learn by playing and exploring, namely a good and safe location, utilizing a play space environment with natural elements (open space), can be easily accessed by children, providing facilities for children to socialize and community, has a kindergarten game facility in a play environment, has a large play space area, has an easy surveillance area.

The important thing to apply to the play space learning environment is safety reasons for children where children often play and go around knowing the world around them. Therefore, it is necessary to design a child's learning play environment that gives children direct access to the natural environment, supports children's curiosity about the surrounding natural environment, and creates an environment that enhances creativity, and enhances children's development. The elements of the design of the play space learning environment are (the Toronto District School Board Play Space Learning Strategy), which is to provide a means of play that can support children's activities, create access to a learning play area that involves interaction with others. Playing with friends, teachers, and parents, creating an attractive area for children to learn and play, creating an environment of play space that is safe for children and easily accessible to children, supports children's activities in activities that are fundamental to learning. Elliot Eisner [2] The Educational Imagination suggests that children carry out physical exploration and play activities, this happens because at an early age they are at the stage of knowing the environment and have a great curiosity and want to try and know things new thing.

2. Research methodology
The research method used in this study is a qualitative method. The qualitative method will be carried out by finding data, theories, and literature reviews that are relevant and related to the center of early childhood education and know the principles of play space that will be applied to the PAUD itself. The research will lead to the design of the concept of play space in early childhood education centers with an environment of learning and playing using open space elements. The study was conducted in several stages. The first stage before researching is determining the topic to be discussed, then determining the problem to be examined. The next stage is to collect data that supports the needs of theory, elements, and design standards. The data collected is primary data and secondary data. The data collected is as follows:

| Table 1. Primary and secondary data types |
| Type of research | Data                              | Purpose                                                                 | Method            | Source                      |
|------------------|-----------------------------------|-------------------------------------------------------------------------|-------------------|-----------------------------|
| Primary          | Similar building design           | To find out the design you have as needed as a reference.               | Field study       | Personal                    |
|                  |                                   | To find out the stages of activities and activities carried out in the implementation of learning in PAUD. |                   |                              |
| Primary          | Activities of PAUD               | To find out the application of the playing while learning room to support children's activities. | Observation       | Personal                    |
| Primary          | Play space Benefit               | To find out the benefits and impact of play space on children's activities. | Study of literature | Internet, book, journal     |
| Primary          | play space principle             | To find out the stages of activities and activities carried out in the implementation of learning in PAUD. |                   |                              |
| Primary          | Location                          | To find out the application of the playing while learning room to support children's activities. | Study of literature | Internet, book              |
| Primary          | Data                              | To find out the application of the playing while learning room to support children's activities. | Observation       | Field study                 |
| Primary          |                                   | To find out the standardization of PAUD design regarding the capacity, area, and supporting facilities. | Study of literature | Internet, Government regulations |
| Secondary        | Standard for PAUD facilities needs| To find out the requirements for building planning and PAUD space          | Study of literature | Internet, Journal, book     |
| Secondary        | UGB PAUD Building Regulations     | To find out the criteria for playing and learning areas for children's activities | Study of literature | Internet, Journal, book     |
| Secondary        | Play space criteria               | To find out the principle elements that exist in the play space learning environment. | Study of literature | Internet, Journal, book     |
| Secondary        | The principles of Play space Learning Environment | To find out the principle elements that exist in the play space learning environment. | Study of literature | Internet, Journal, book     |

3. Result and discussion

3.1. Analyst characteristics and children's activities

Observations were made at Planet Kidz Preschool, located on Jl. Sunda Kelapa No.3 Menteng, Jakarta Pusat. This observation activity was held on Thursday 30 March 2017 in accordance with the learning schedule of Planet Kidz Preschool students. The observation process is based on theories that have been obtained about the characteristics of children at play according to Elliot Eisner. This observation aims to determine the child's activities when playing with a variety of criteria for exploration, interaction, and curiosity. This observation is fundamental to the Gibson Affordance theory in which to see the level of exploration of children and the physical action of children on their environment. After obtaining the theory, the authors conclude the children's activities when playing with the difference in two environments, namely outside the room and indoors in order to analyze changes in children's movements with the integration of play space. The existence of room differences aims to find out how the level of exploration and interaction of children when playing in two different situations and locations. From the observations of the characteristics of the children, the following table results are obtained:
Table 2. Observation results of children's characteristics

| Sample  | Activities (Play space Outdoor)      | Amount       |
|---------|-------------------------------------|--------------|
| 18 Children | Exploration Running                  | 15 Children  |
|         | Walking                             |              |
|         | Explore                             |              |
|         | Interaction                         | 16 Children  |
|         | Curiosity                           | 17 Children  |
| Sample  | Activities (Indoor) Amount          |              |
|         | Exploration                         | 6 Children   |
|         | Interaction                         | 5 Children   |
|         | Curiosity                           | 12 Children  |

From the results of these observations the criteria for children playing and doing activities indicate a higher level when children play and learn outdoors, the level of exploration, interaction, and curiosity of children is higher when compared to when children play outdoors. This can then be used as a reference in the procurement of design concept elements. Exploration and exploring, social interaction, and curiosity have presentations of 83.3%, 88.8%, and 94.4% of the total 18 children. These three activities can be considered as a reference in designing.

Table 3. Outdoor children's activities analysis result

| Category     | Play space (Outdoor) | Information on Analysis Result                                                                 |
|--------------|----------------------|-------------------------------------------------------------------------------------------------|
| Play space   | Outdoor              | Exploration: From the analysis it was found that children when playing outdoors (play space) explored by running around the area with a change of motion in a short period of time     |
|              |                      | Interaction: Children playing outdoors have interactions with peers and with the coach. Interactions that occur are social interactions where children play together |
|              |                      | Curiosity: Children have a great curiosity, it will be when they are in the outer space they explore.                       |

Table 4. Indoor children activity analysis results

| Category     | Play space (indoor) | Information on Analysis Result |
|--------------|---------------------|--------------------------------|
Exploration: Based on the results of the analysis it was found that when playing indoors children have a low level of exploration. Changes in children's movements are not significant in a long time.

Interaction: Children's social interaction when playing indoors is very minimal. Children play with the desired object so that children become more individual and have less interaction with each other.

Curiosity: Based on observations made when the child plays in the room the child has curiosity. Some children choose to look at various books and objects.

Based on observations made, it can be concluded that early children have a great level of exploration when playing outdoors. Early childhood explores and has more movement than playing indoors. In addition, the level of social interaction of children is greater when children play outdoors, when children play indoors the children's movement is limited and the level of exploration is low and children play with an object individually.

3.2. Child movement analysis
Observations were made at Planet Kidz Preschool, located on Jl. Sunda Kelapa No.3 Menteng, Central Jakarta and in the RPTRA (Child Friendly Integrated Public Space) Manggis Slipi, West Jakarta. This observation activity was carried out on Thursday 30 March 2017 in accordance with the learning schedule of Planet Kidz Preschool students and on Wednesday 29 March 2017 in the RPTRA Manggis, West Jakarta. The observation process was carried out with the aim of obtaining accuracy data regarding differences in the movements of children when playing in two different places namely indoors and outdoors. This is to show that there are differences in children's movements that will be taken into consideration in the design elements. Besides that, it can also be seen that differences in the level of criteria and development of children in learning by playing. Furthermore, the authors conclude the child's activities when playing with the difference in two environments, namely outside the room and indoors in order to analyze changes in children's movements with the integration of play space.

Based on observations that have been made, it can be concluded that changes in children's movements are freer and children's exploration levels are higher when children play outdoors. Motion changes that can be seen in the table show that children playing in the Mangosteen RPTRA and in Planet Kidz Preschool play space have more movement changes and changes in children's movements form patterns that are not dynamic but changes in children's movements forming attractive patterns when playing. Therefore, an attractive form can be applied to the design. Besides that, in observing changes in children's movements triggered by a stimulus that can be concluded that changes in children's movements when playing are supported by the presence of play space stimulus elements that can trigger children to have curiosity and try new things about something that is the element of play space in the form of a game of blocks, slide, swing, seesaw, fish pond, and garden. This is in accordance with the Gibson Affordance Theory where children will have a reaction to their environment. With the
conclusions that have been obtained, the play space element can be used as an application of objects in the design.

Table 5. Results of analysis of changes in child movement

| Location    | Figure | Explanation                                                                                                                                 |
|-------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Planet Kidz Preschool Outdoor | Based on the analysis of changes in children's movements when children play in the room visible changes that are not significant and there is no visible change in freer motion. Child exploration when playing indoors is limited and there is less movement of children. Only one (blue) out of ten children who see more movement changes. |
| Planet Kidz Preschool Indoor | Based on the results of the analysis of children when playing outdoors have changes in motion and more exploration. Can be seen from the movement map of children having significant changes in motion and more. This is also supported by many objects that attract children's curiosity so that they have more opportunity to explore more freely. There is no change in motion shape changes that are straight (straight / dynamic). When playing and exploring children move freely and changes in children's movements to form patterns that are curved and spread. |
| RPTRA Manggis | Based on the analysis of changes in children's movements when playing freely in an RPTRA can be seen from the movement map of children having free and significant movement changes. Changes in children's movements when playing outdoors such as RPTRA have more free movement patterns and more exploration, exploring, and running more. This is also supported by objects that attract children's curiosity to explore. |

3.3. Play space principle analysis

This analysis is based on the principle of the Play Space Learning Environment in Aileen Shackell [1] theory in his book entitled Design for Play: a guide to creating a successful play space learning environment. This analysis is carried out based on the Kindergarten case study which has the same concept, namely Vo Throng Vietnam Kindergarten, WUXI China Kindergarten, and Kensington Thailand Kindergarten. Based on the analysis conducted, it can be concluded the results of the analysis are as follows:

- Good and safe location: From the three Kindergarten, it can be concluded that the play space zone is applied based on the location of the Kindergarten and the surrounding environment. Kindergarten Wuxi has close access directly to the highway, therefore the application of play space at this kindergarten is centered in the middle of the building. And two other kindergartens have a safe location so that the play space zone is spread and attractive.
- Utilizing natural elements: Play space always has access to the outside environment to utilize natural elements such as flowers, trees, grass, greening, animals. This gives children to be able
to play outdoors by having a direct relationship with the world and the surrounding environment. Children can explore the outside environment

- Facilitate children's access: Play space created in a kindergarten needs to pay attention to the ease of access for children to reach their playground. In addition, safety for children to play space needs to be considered by reducing the use of stairs in children's play and learning areas

- Providing facilities for children to socialize and community: The existence of facilities for children to socialize and community in play space can be implemented by means of a group chair, mini gazebo in the area of the play environment so that children easily interact and socialize

- Having a large Play space area: Having a large play space area can support children to explore more broadly and have a place to play and learn with more educational elements

- Has an easy supervision area: Play space will be applied close together and easily accessible from all points of view and directions so that the supervision of children playing is more secure. Play space has a direct relationship with the spaces in the PAUD building. In addition, centralized supervision can more easily supervise children when children do their play activities.

3.4. Building analysis with play space principles

Building analysis is carried out based on aspects of the play space learning environment principle and several considerations.

3.4.1. Basic form. Based on an analysis of the form of comparison according to the book Architecture Forms, Spaces and Order [3], the form that has the best potential for design is a circular shape where the shape has a central and stable nature. In addition, this form can make a movement around to users where it can be applied to early childhood education centers with the character of children who explore.

3.4.2. Security. Based on comparative study analysis, the shape of the building and the centralized circulation can facilitate supervision when children play. The centralized form can have views in various directions so that the condition and situation of the child's activity can always be easily monitored by the coach. It can be concluded that the circular shape and curve have a centralized view from various directions.

![Figure 1. The building period is centered](image)

3.4.3. Site development. Site is on Jl. Trikora Halim Perdanakusuma, Makasar, East Jakarta. In accordance with RDTR regulations the site has a 5m GSB. The existing condition of the site is still shady with lots of trees and greenery. In addition, the area around the site also has a good greening. Access to the site has a large enough road so that it can easily go to the site either by two-wheeled vehicles or four-wheeled vehicles. By adjusting to the elongated tread shape, the shape of the building will adjust.
3.4.4. Bubble diagram. Based on the analysis conducted based on the spatial program, a bubble diagram is formed that shows the relationships between spaces and the nature of space.

3.4.5. Pathways. Based on the design development found, a pathway element is applied that can be used as a design element to be integrated into the building. Pathway can direct children to move freely when playing by creating a form of continuity and has an attractive form for children to move and play actively.

3.4.6. Safety. Based on comparative study analysis, to support the element of child safety in playing in a play space in kindergarten security has an important role. Children when playing enjoy exploring and running, so it is not uncommon for children to fall frequently. From the results of a comparative study the application of building integration with play space has a continuity pattern where this can also reduce the use of stairs so that children can play more freely and safely.

3.4.7. Aesthetic design and element play space. Tread has a good location which is in an environment that has a good greening area. In the condition of the site itself also has greening, existing trees that can be used as a play and learning environment that utilizes natural elements such as the principle of play space.

Trees on the site can be used as a play element for children and can be used as a shelter for children to play outdoors. In addition, the creation of a vegetable garden and flower garden can be applied in the children's play space area in addition to environmental beauty, it can also be an educational element for children to get to know other types of flowers and plants.
3.5. *Children's games on play space*

Children's educational center games have various types by having the choice of natural space and open space. This is also related to the City of Subiaco government's research on the type of play space that children are interested in. The highest percentage is play space with the type of natural space. In this case various types of games will be analyzed in the concept of play space. The applied game can be a stimulus element for children to explore and get around. Laying the game as a stimulus element is placed scattered so that children can explore and have curiosity. The object that becomes a stimulus element, namely natural space, there are plants such as a garden and a vegetable garden can be applied as in the case of Throng Kindergarten which implements a vegetable garden not only as an aesthetic but children can plant which is fun and educational. Children can get to know plants, types of vegetables and flowers, water area is applied in order to increase children's insight in knowing their environment. In this case the fish pond can be applied as well as Planet Kidz Preschool which has a fish pond where feeding fish and playing in the water area is one of the activities scheduled while in kindergarten. And the sand area can be applied to children playing with nature and the environment where children can recognize what objects are in their environment. In addition to the elements in open space, swing is a fun game for children. Observations were made at the Mangosteen RPTRA and at Planet Kidz Preschool having a swing in its play space. In addition, the slide was a game that is often found on children's play space and playground. At the Planet Kidz Preschool survey site and the Mangosteen RPTRA both have elements of this game. Gazebo on Planet Kidz Preschool is used for children to play blocks, puzzles in groups. This can increase children's interactions with each other and with teachers. Children are given the opportunity to play together using an artificial game such as a bicycle and a maze.

3.6. *Building integration with play space*

Based on the analysis and discussion that has been carried out, the building is integrated with play space where indoor space has connectivity with outdoor space so that space with play space has direct integration.

4. *Conclusions and suggestions*

An early childhood education center that has a concept of play space learning environment where the early childhood education center has an outside space for children to play and learn that has elements of education that are adapted to the characteristics of children while playing, namely exploration, interaction, and have a sense of curiosity. The existence of a play space is important to support the activities of young children who learn by playing. Children can explore more and interact more and get an educational platform to get to know the surrounding environment.

Early childhood education center planning with the concept of play space needs to pay attention to various principles and elements of play space so that children's play and learning areas can support children's activities. The principle of play space learning environment according to Aileen Shackell [1] theory serves as a guide to the design of space spaces in early childhood education that needs to be fulfilled, including safety and comfort, easily accessible to children where the building is made continuity so that there is a reduction in stairs which is safer for children, utilizing natural elements where the concept of play space is itself has a play space in the outdoor area (outdoor) so that children are closer to their environment, has a child's social and community facilities, has play facilities for children namely stimulus objects, has a large play space area and has an easy supervision area with...
buildings centered. The application of the concept of play space on PAUD also requires stimulus objects that can help spur children to explore, interact and have curiosity so the concept of play space needs stimulus elements such as games that have natural elements and educational elements. In buildings, the concept of play space that is easily accessed by children is a building that is centered on this matter to support supervision of children from all directions apart from that there is continuity where all sides of the building are made continuously without end so that this has the advantage of reducing the use stairs that are dangerous for children when children play so that with continuity it will be safer for children to explore.

References
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