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THE KINDERGARTEN INTERIOR AS AN IMPORTANT FACTOR FOR THE HEALTHY DEVELOPMENT OF PRESCHOOL CHILDREN

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ABSTRACT

An important factor for the healthy growth and development of children is the proper organization of interior space and the use of adequate equipment tailored to their age. Analyzing psycho-physical activities of children in kindergartens and the functions they perform during the day, an environment should be designed to fit their social, cognitive, psycho-physical and other developing needs. Organization of environment or design of kindergarten playrooms is the key factor as well as furniture design. The paper presents the environment of 27 public kindergartens in towns Skopje, Zagreb and Sofia and analyses current state of interior and furniture design in their playrooms. The new suggestions based on observed environments are given.

Key words: kindergarten, pre-school children interior design, playroom, child development, health.

INTRODUCTION

The proper development of pre-school children (aged one to six), is the primary responsibility for any society. This is a period in which the greatest changes in development occur and when the personality of the child forms its basis for a healthy psycho-physical life. Therefore, preschool institutions should meet the basic conditions for proper care, nurture and healthy development in the educational process of children.

The number of children enrolled in the educational process in pre-school institutions varies from country to country. This level it is from 40% to 90% in highly developed countries (Ivanovič Šekularac 2000), which means that out of the total number of pre-school children in the countries where the research was conducted, 20% to 30% children attend pre-school institutions. The rapid pace of life, the struggle for existence, the work obligations of both parents, imposed the need for children to be taken care of in pre-school institutions more often. This, in turn, imposes the necessity of new preschool facilities and their proper equipping.

The playrooms in which almost all activities are performed during the day should be the most susceptible to change and adaptation. Proper spatial organization leads children to acquire good habits to fulfil their responsibilities, to improve social interaction, in preparation for further life (Ivanovič Šekularac 2000, Stevanović 2001, Stoecklin 2007, Dudek 2008, Domljan 2011, Fischil 2011, Wardle 2011, Dobrevska (Добревска) 2012, Klein 2014, Falk 2019).

The approach that leads to designing the environment in the kindergartens should be considered multidisciplinary, so the review of previous research includes the results of experts from different fields: architects, designers, constructors, ergonomics, anthropologists, pedagogues, psychologists, physicians and others, as well as study and analysis of laws, rulebooks, norms, guidelines and other regulations and rules that process and regulate the issue of designing and equipping

preschool facilities for the purpose of upbringing and education, as well as shaping, constructing and ensuring safety of the furniture and equipment for preschool children (Dudek 2005, Dudek 2007, Iliev *et al*. 2019).

The importance of influencing the upbringing and educating of children are all the more important when it comes to such a system that considers only a small segment, which also has an unavoidable impact on the psychophysical, cognitive and social development of the young being - the subject environment, furniture, equipment, didactic toys, as well as other elements in the space (Domljan*et al*. 2015). Most recent literature on this issue deals with doctoral dissertations (Domljan 2011, Yarbrough 2001, Pasalar 2003), textbooks, books, and manuals (Auf-Franić*et al*. 2003, Dudek 2007, Domljan *et al*. 2015) who at a scientific and professional level see the problems, opportunities and directions on how to approach the architecture, the design and the construction of new spaces and products (equipment), according to the modern requirements of the children and the educational staff in the kindergartens. Unfortunately, modern methods of preschool education go beyond the design and quality of wood products (furniture, didactic toys and equipment) that children use daily in play, work and leisure, and more attention is paid to modernizing methods than the products and equipment with which those methods are conducted (Domljan *et al.* 2015, Vuglek *et al.* 2018).

The aim of this study is to analyze the interior in the playrooms in kindergartens in three southern European countries, where children stay in order to identify deficiencies in them.

MATERIALS AND METHODS

Polygons

The research has been conducted at several polygons, in the period from January 2017 to January 2020. Research polygons were preschools (kindergartens) in three capitals, in three countries:

I. Skopje, Republic of Macedonia (I polygon),
II. Zagreb, Republic of Croatia (II polygon),
III. Sofia, Republic of Bulgaria (III polygon).

Permission has been granted from the municipalities or other competent institution to access each of the kindergartens. The total number of kindergartens was 27, from which 19 are modern buildings from 20thcentury, 7 conterporenery building and 1 adapted building. 11 buildings have old and new furniture, 10 old furniture and only 6 new furniture.

Research method

This research is a part of larger research conducted upon the PHD thesis of the first author (still unpublished). Method of discussing with teachers in kindergartens, as well as observing and photographing have been used and results described in this article. There has been digital photography of a formative - constructive solution of furniture in children's rooms, the spatial organization of a part of that space and children during the process of working, playing and eating. Teachers were asked about opinions on interior design, space needed and furniture and equipment. The conversation was held during common everyday activities in all observed kindergartens.

RESULTS AND DISCUSSION

Results of photographing and observing are presented at the Figures 1a, b; 2a, b; 3a, b.

Space organization and the design of the playrooms is an important factor in children's

mental maturity. They should not only be pleasing to the eye, but also to have a purposeful function aimed to children. When the space is well organized with open paths that clearly lead to the activity centers, the children can deal with a certain activity or game on their own. They can move freely and be redirected from one activity to another, or from one center to another, without the need for the presence of a teacher who is leading a certain activity. When space is poorly organized, children depend on the teacher for guidance and the teacher's behavior becomes directive. If teachers spend more time to directing group behavior, they have less time to assist individual children and children have fewer opportunities to participate in free play. When the space is not well organized, the children depend on the teacher and not have the freedom of choice or free movements. For example, after an appropriate change in the environment such as the addition of a complex or super play unit, children may engage in more free play, exhibit greater self-reliance, or develop longer attention spans (Colbert 2006).

According to teachers' opinion in observed kindergartens, the room in which the children reside should be flexible in terms of furniture and partitions that are in it, so products (toys, books, furniture etc.) they can be moved by the children themselves. Children feel comfortable in space in which they have control, i.e., when they can freely move elements around it. This helps the children fully fit in the space, to explore, create new small spaces suitable for their activity. If the space is completely static then insecurity arises in children and they are less independent. The space should also be clear, which means that every part of the playroom clearly indicates for which function it is intended. If the space is chaotic the children will be disoriented and any activity will be performed with less capacity because they cannot discern the space clearly enough. In this context, it can be said that communication facilities, too, where children move, should also be clear and concise to avoid disorientation. This can be achieved by inserting color in the corridors themselves as well as on the walls and the floor surface. Moreover, space should be visually accessible, because for children, although at certain times of the day they wish to withdraw in some part or play in smaller groups, the visibility is still very important. On the other side, visibility is also good from the point of view of safety, as teachers have constant supervision of the children. Visual access, besides except in the playrooms, should also be present in other areas used, such as the wardrobe area, toilets or communication facilities.

According to Nikoloska (2002), an important factor for social interaction is the size of the premises as well as the resources therein. If the playroom is too small this increases aggressiveness and emotional excitement. In rooms that are too spacious, children can be "lost" if the space is not properly organized. Toys also affect the interaction of children - each child has its favorite toy at a certain period of the day. Contrary to this, if there are fewer toys, children are more in a position to socialize with each other, i.e. social interaction increases.

According to results presented in this paper, it can be seen that the situation in Skopje and Sofia is not satisfactory (Figures 1a, b and 2a, b). The playrooms have no activity centers and are not divided into smaller corners. The playrooms are fully open, in the middle there are tables and chairs or free space where there is nothing. Also, in most preschool facilities, the cabinets are too high and children cannot freely reach objects. In Zagreb the situation is a bit different (Figure

3a, b), the playrooms are divided into small corners, the cabinets are fully adapted to the height of the children, but in some of the buildings the centers are such so that chaos occurs in the room, they are confusing and do not have a clear indication of the purpose of the centers. 'Children play with each other much more when the zones, the centers are connected and clear than when they are separated' (Liempd Van 2006).

a b

Figure 3: Examples of spatial organization in Polygon I. Open space without partitions. Photo: Iliev 2017

a b

Figure 4: Examples of spatial organization in Polygon III. Open space without partitions. Photo: Iliev, 2018

a b

Figure 5: Examples of spatial organization in Polygon II. Space with a partition. Photo: Iliev 2017

Producers of kindergarten equipment and furniture usually give some good and "educationally proper" examples of what a spatial organization should look like. Parameters of some examples how to design interior in kindergartens' playrooms are given in the following figures 4 and 5.

Figure 6: A playroom that celebrates students celebrates their artwork and creativity. Source: Web 1

Legend:

1. **Rice Grass Wave Panel, Embedded layer of real rice grass brings nature into the classroom, Translucent panel lets in light while still allowing supervision.**
2. **Translucent Radius Panel, Children naturally gravitate to curves, which are more welcoming than corners. Translucent panel lets in light while still allowing supervision**
3. **Puppet Theater, Use the back of the shelf. Hook and loop fasteners attach to the fuzzy bulletin backing, so you can put it to use for displays. Back Cover accessories are also available**
4. **Translucent Back Shelf, Mobility is built in. Flip up the hidden wheels and roll into place. Flip the wheels back down for a perfectly stationary unit, Translucent back lets in light and improves supervision.**
5. **Child size Dresser, the right height for serious work and play, Versatile storage unit can be used in any classroom area**
6. **Arch, Child-height, wheelchair accessible Arch is a welcoming gateway into new spaces.**

Figure 5: Clearly defined spaces eliminate chaos. Source: Web 2

Legend:

1. **Rice Grass Wave Panel, Embedded layer of real rice grass brings nature into the classroom, Translucent panel lets in light while still allowing supervision.**
2. **Translucent Radius Panel, Children naturally gravitate to curves, which are more welcoming than corners. Translucent panel lets in light while still allowing supervision**
3. **Corner Shelf, beauty of smooth curves—the perfect way to finish off a room divider**
4. **Translucent Back Shelf, Mobility is built in. Flip up the hidden wheels and roll into place. Flip the wheels back down for a perfectly stationary unit, Translucent back lets in light and improves supervision**
5. **Child's Sofa, Soft, durable foam cushions are tough, waterproof, and easily cleaned**
6. **Appropriatework table**

CONCLUSIONS

Proper organization of space and the use of appropriate equipment adapted to children age is an important factor for their proper growth and development. Analyzing the psychophysical activities of children as well as the functions they perform, a space must be designed and arranged that will correspond to their educational and developing needs. In the playroom there should be partially divided parts, especially if children want to play in smaller spaces, or feel the need to be left alone. They can take a shelter in one of these divided parts and play undisturbed. The playrooms that are part of the facilities of this research are not organized according to this concept. They are of the open type, which negatively affects the mental development of the child. Therefore, the partial division model should be used. It is necessary to divide the parts around the corners of the room, i.e. in those playrooms that are bigger in size to make such corners along the entire length of the playroom. The partitions can be made of furniture elements or toys that are in the playroom. The sleeping function would be most effective if it was separated in a separate room, where each child would know his/her crib, so that he/she could lie down whenever he/she wanted.

Results presented in this paper are a part of a huger research conducted in three countries – Croatia, Bulgaria and Macedonia. According to photographed and analyzed materials, in all observed kindergarten interiors there are a lot of everyday problems due to improper interior and furniture design, which represents everyday barriers in the healthy upbringing and development of children. Authors are hoping that this article will help in establishing new equipping regulations and interior design of all kindergartens in the future.

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