

УДК 72.012.8+7.012:  
37.013. 42:373.2

DOI:10.30857/2617-  
0272.2023.1.1.

BULHAKOVA T. V., QIAO D., LU Y.

*Kyiv National University of Technologies and Design, Kyiv, Ukraine  
Kyiv Institute at Qilu University of Technology, Jinan, China*

## INTERIOR DESIGN PRINCIPLES OF INCLUSIVE PRESCHOOLS

**The aim** of this study is to identify the principles of shaping the interior of an inclusive preschool for children aged 3–6 years based on an analysis of modern ideas of inclusive kindergarten design and research in child behavioral psychology.

**Methodology.** The following theoretical and specialized research methods are used in this study: analysis of literary sources and normative literature on the research topic, comparative analysis of projects implemented within the framework of inclusive kindergartens, and methods of systematization, synthesis, and data generalization.

**Results.** The study has identified six fundamental principles for shaping the interior of an inclusive preschool for children aged 3–6 years. These principles are based on both child behavioral psychology and modern practices in designing kindergarten interiors. The identified principles are the "principle of openness", "principle of difference", "principle of creativity", "safety principle", "principle of fun", and "principle of naturalness". By utilizing these principles, a modern methodology for interior design of inclusive kindergartens can be developed, which will include specific techniques for each principle. The outcome will be a space that provides children with a sense of security, comfort, interest and contributes to their overall harmonious development.

**Scientific novelty.** The study presents the principles for interior design of inclusive preschools, which will aid designers in creating a harmonious and inclusive kindergarten space that supports the comprehensive development of a child's personality. This study advances the development of interior design for inclusive kindergartens, taking into account new societal needs in modern conditions.

**Practical significance.** The findings of this research have practical implications for the field of interior design in inclusive kindergartens as well as for students in the Environmental Design program. The identified principles can serve as a guide for designers in creating a harmonious and inclusive space that promotes the comprehensive development of children.

**Keywords:** design; interior; inclusive preschool institution; kindergarten; interior design principles.

**Introduction.** Early childhood is a crucial stage in human development [17], where kindergarten plays a significant role in cognitive training and socialization. As the first social experience outside the family, kindergartens provide children with an opportunity to learn and engage in collective activities. Moreover, kindergartens have a responsibility to develop children's potential [9] and shape their behavioral patterns. The spatial environment, activities, and learning content provided by kindergartens have a profound impact on children's lives [3]. Growing up in a positive environment can positively influence a child's psychology and physiology, leading to healthy and orderly development.

However, in China, creating spaces that are suitable for children's growth has become a challenging issue that requires a solution. For many years, too many kindergarten architectural spaces have been repurposed from office space, living space, and other function spaces without considering the size and needs of children. Consequently, the resulting environment has retained its "adult" characteristics, failing to accommodate the children's developmental needs. The kindergarten environment is often perceived as an adult's perspective, neglecting the children's perception of space. Children who grow up in such an environment may unconsciously develop a sense of rejection, which can significantly affect their physical and mental development. Conversely, when

children are in a comfortable space, they can quickly let go of their sense of defense and embrace the intimacy that the kindergarten environment brings.

Therefore, we strive to design a new kindergarten model that combines education and entertainment, making learning and play the core activities. To address these issues, it is important to identify the principles of interior design for inclusive preschool institutions, which will help ensure an effective living environment for children's growth and development in practice.

**Analysis of previous researches.** The following Chinese authors, including Ma Lihui [12], Lu Yi [10], and Liu Shida [11], have incorporated children's behavioral psychology into interior functional planning and furniture materials as part of inclusive design. These researchers have addressed the functional planning of spaces that meet children's needs, taking into account their physiological growth, and have also considered the characteristics of furniture for different age groups.

The works of Chinese authors have consistently prioritized human-centered design, focusing on the safety of children's use of kindergartens. Authors such as Kan Yude and Yang Yan have studied the design of interior furniture, taking into account the characteristics of different children's use of furniture.

Some authors have also paid close attention to the color and decorative texture of furniture. Hou Mingcheng [5] and Jing Ge, among others, have explored the influence of color in the design environment and on children's growth. These authors argue that color, smell, and materials can have a psychological and emotional impact on children.

These articles provide research findings on various aspects of kindergarten education. For example, Aljabreen [1] provides a comparative analysis of different models of early education, such as Montessori, Waldorf, and Reggio Emilia. Lawrence [2] examines the

impact of the physical and social environment on the health and well-being of children and young people. Hein and Cassirer provide workplace solutions to childcare problems. Lee [8] and others explore the design of facilities and environments in kindergartens based on child development theory. Rao and Li [13] describe beliefs and practices about play and learning in Chinese kindergartens, while Sheridan [14] et al. examine professional development issues and research needs in early education programs.

Overall, these studies highlight the importance of kindergarten interior design for inclusive early childhood education and the need for further research in this area.

**Setting objectives.** The objective of this study is to identify the interior design principles of inclusive preschool institutions that will serve as the foundation for creating a harmonious kindergarten space that caters to the personality traits of children aged 3–6 years.

**Results of the research.** The following interior design principles of preschool institutions have been identified based on studies of child behavioral psychology, which determine the main personality traits of children aged 3–6 years, and on the analysis of modern experiences in designing kindergartens in China and Japan:

*1. Principle of Openness:* Kindergartens play a crucial role in a child's social development. Openness refers to the absence of fixed functions, blurred spatial boundaries, and interpenetrating spaces that are not independent closed boxes. In terms of the visual and behavioral aspects of children, openness allows them to have a broad field of view, engage in free activities, interact with children of different ages, and break away from traditional class divisions. Interior design should focus on enhancing openness in space, breaking down traditional closed organizational relationships, using partitions and furniture for space division, reducing the use of closed walls, connecting different

classes, blurring spatial boundaries, and breaking down the definition of each space's function. This approach increases space flexibility by changing the space layout, providing a flexible effect. In addition, it is important to pay attention to the penetration of different spatial interfaces. Children like to observe, imitate, and learn from the behavior of other children, teachers, and parents. Therefore, designers can incorporate holes of different sizes on the walls to facilitate communication among children, parents, and teachers, as well as peeking through the holes.

Children prefer spaces with a wide view, and the use of partitions or furniture to divide or enclose the space can transform the originally closed space into an open one. For instance, through the manipulation of partitions, folding doors, movable furniture, etc. [3], the size of the space can be easily adjusted according to the needs, which not only allows for flexible division of different spaces but also promotes openness between them, increases the freedom of the space, and makes it more flexible. In an open space, children tend to be more relaxed and their mood is more pleasant. The circulation path is also more diverse, as shown in the Smartno time-sharing kindergarten (Figure 1) [15] which adopts an open floor plan, with each space separated by sliding or folding doors. When children need to move freely, they can open the doors to create a completely open space, which is convenient for children to gather together for activities and communication. The designer of Smartno time-sharing kindergarten conducted an experiment where they randomly selected three children and recorded their circulation path in the traditional activity space, then opened the space and recorded the children's circulation path again. The results showed that the open space greatly improved children's communication and learning, giving them more freedom to behave in the space.

In interpenetrating indoor spaces, children can move freely and observe the

behavior of their peers in other spaces, which is conducive to observation and behavioral imitation between children of different ages [3]. High-quality kindergartens will design openings of different sizes on the interfaces between spaces to attract children's attention. For example, at KO Kindergarten in Japan, the entrance of the kindergarten is equipped with door openings of different shapes, facing the entrance corridor, and the inside of the opening is a shoe-changing room where children can communicate with other children who have just entered the kindergarten while changing their shoes (Figure 2) [7]. Another example is Saitama Yutaka Kindergarten in Japan, where the walls are designed to look like mountains, with the upper part hollowed out and the lower part solid. The height of these walls affects children's line of sight and thus influences their behavior and activities (Figure 3) [18].

*2. Principle of Difference.* Children are fundamentally different from adults in their psychology and behavior. They are self-centered, have a limited sense of reversibility, are curious about their surroundings, and have rich imaginations and creativity. Children are drawn to bright colors and varied spatial forms, they love to play, and often use objects in their environment as props for their games. Additionally, they enjoy playing with their peers, which sets them apart from adults.

Kindergarten interior design should take into consideration these differences and prioritize humanization. As children and adults differ significantly in terms of body scale and behavior, designers should observe the space from the height of a child's eyes, experience the space with a child's body shape, and consider how children might interact with the space. Children's height determines their line of sight, and the interior design should use this as a guide when designing the space. This includes everything from environmental design, architectural shape, space form, furniture size, space facilities, window sills, steps, corners, stair handrails, and other

details. By considering objects from a child's perspective, designers can avoid creating spaces that are too adult-oriented.

Children love to run, jump, observe, explore, snoop, chase, frolic, and take risks. In reality, parents and teachers are often concerned about the safety of children when they play in dangerous places. However, children often find ways to challenge themselves through play, climbing, and playing with friends. To them, adventurous play is innate. Therefore, designers should focus on creating play spaces that meet their needs. In the kindergarten space, different levels of planes can be designed to meet children's needs for vertical jumping. For spaces with high levels of activity, designers can include structures that challenge children to grasp and hold. In the outdoor space, play areas, high and low sports fields, and challenging game facilities can be included. Play is an important aspect of a child's psychological development and personality, and designers should create spaces that encourage play and participation.

When designing kindergarten space facilities, it is crucial to consider the characteristics of children's height and visual height. Without doing so, it may be difficult for children to notice the existence of activity facilities within their line of sight. An observation by Barbara M. Skyles, director of the Center for Children's Studies at Berkeley, California, highlights this issue. She noticed that a platform was built under a large tree outside, but no children used it for play. Upon investigation, teachers found that the platform and its entrance could not be seen at all from the children's eye level. Although it was established to provide a place for children to rest and play under a tree, from the perspective of children, it did not exist and could only be seen by adults.

Therefore, in the interior design of kindergartens, it is essential to consider the needs and perspectives of children. The average height of children aged 3-6 years is

between 910-1110 mm, and the standing height is between 965-1220 mm. When toddlers want to reach for items above this range, they may find it challenging and may need to turn to adults for help. If children can easily access what they need, they will feel more confident and develop good habits and autonomy.

Children have weak muscle control and tend to feel tired when repeating the same movement. When steps are too high, they may struggle to climb, and avoid such spaces altogether. Small-scale spaces can provide rich opportunities for children's perception and exploration, stimulating their spontaneous exploration of space such as climbing and touching. Therefore, the height of small-scale space should be between the height of children's standing and the height of standing hands, which is about 1110-1220 mm, to bring comfort and security to children. In summary, designing kindergartens that cater to the height and size of children is crucial to meeting their diverse needs in the space and promoting their autonomy.

*3. Principle of Creativity.* The Principle of Creativity is important in kindergarten space design to foster children's imagination and intellectual development. Designers should understand the psychological characteristics of children and create composite spaces with multiple functions to provide opportunities for different activities. The proportion of dedicated activity spaces such as a library, role play room, cooking room, handicraft room, building block construction room, science laboratory, etc. should be increased to improve children's spatial cognition and imagination.

Play facilities are also important in kindergarten space design as play is a way for children to learn and understand the outside world. Designers should provide facilities for running, jumping, climbing, and chasing behaviors to encourage children's physical exercise and cognitive development. For example, combining entertainment facilities

with boring staircase spaces can make stairs more fun and interesting for children, such as adding a slide next to the stairs. Climbing walls can also be placed in corridor spaces to stimulate children and encourage them to exercise more. Overall, designers should give full play to children's active nature and promote the development of their imagination and creativity through diversified spatial functions.

Providing play facilities in kindergarten spaces is an effective way to attract children and stimulate their creativity. By combining play facilities with otherwise dull or uninteresting areas, such as staircases or corridors, children are more likely to engage in

physical activity and have fun while doing so. This can also help to improve their physical and cognitive development, as they exercise their bodies and minds through play.

One example of this is the Smartno time-sharing kindergarten, which features a slide next to the stairs (Fig. 4) [16]. This encourages children to climb the stairs and engage in physical activity, while also breaking up the monotony of traditional stairs. Another example is the Kanagawa Kindergarten in Japan (Fig. 5) [19] which features climbing walls in the corridor space to encourage children to exercise more and build their courage.



**Fig.1.** Smartno Time-sharing kindergarten activity space



**Fig. 2.** Japanese ko kindergarten entrance hall space



**Fig. 3.** The Yutaka Kindergarten in Saitama, Japan



**Fig. 4.** SmartnoTime-sharing kindergarten slide



Fig. 5. The Kanagawa Kindergarten Corridor, Japan



Fig. 6. Hong Kong Spring Children's Learning Centre

In interior design, it is important to take into account children's active nature and design spaces that stimulate their senses and promote their creativity. By incorporating play facilities into kindergarten spaces, designers can provide children with opportunities for different behaviors and activities, helping to strengthen their understanding of the world around them and promoting their all-round development.

**4. Safety Principle.** Safety is the top priority in kindergarten interior design. Children's safety awareness is not yet fully developed, so it is necessary to take measures to ensure their safety. In terms of space design, the height of the building should be low, the height difference of the indoor space should be minimized, the ground materials should be non-slip and easy to clean, the corners of furniture and walls should be rounded, and sharp corners should be avoided [4]. The design of the kindergarten should comply with the relevant safety regulations, and the installation and use of electrical equipment should also comply with safety standards. The kindergarten should be equipped with fire-fighting equipment and emergency exits to ensure the safety of children in the event of an emergency.

In addition, kindergarten interior design should also take into account the needs of children with disabilities, and provide facilities that are accessible and safe for them. The design of the kindergarten should be inclusive, and create a friendly and inclusive

environment for children with different abilities.

**5. Fun Principle.** The interior of a kindergarten should be interesting to children, meaning it should have a bright and expressive composition that is suitable for their age and contributes to their comprehensive development.

Color is one of the main tools for creating a harmonious, interesting, and developmental environment for children. For example, the use of blue and green in the Hong Kong Spring Children's Learning Center (Figure 6) [6]. creates a calming and natural atmosphere, which can help children to focus and concentrate better. The colors are also coordinated in a way that is visually appealing and comfortable for the children. Overall, attention to color coordination and comfort is important in creating a space that is both stimulating and conducive to learning and development.

In addition to color, the texture and material of the space also play an important role in creating a comfortable and attractive environment for children. The texture of materials should be diversified and interesting, such as using wood, rubber, fabric, and other materials with different touches to create a variety of sensory experiences. Soft materials can be used in areas where children may fall or bump, such as play areas, to ensure their safety. Hard materials can be used in areas where children need to learn and explore, such

as science and technology areas, to enhance the authenticity and practicality of the space.

The furniture in the kindergarten should also be carefully selected and placed to meet the needs of children's activities and learning. Furniture should not only be functional but also visually appealing to children. For example, colorful and uniquely shaped chairs and tables can attract children's attention and make them more willing to participate in activities.

Lastly, educational teaching facilities, such as projection screens, interactive whiteboards, and multimedia equipment, should also be incorporated into the design to provide children with a more comprehensive learning experience. These facilities can create a dynamic and immersive learning environment that is more engaging and effective for children.

In summary, the Fun Principle in kindergarten interior design emphasizes the importance of creating a flexible and interesting space that meets the individual needs and psychological behaviors of children. Color, texture, furniture, and educational facilities are all essential elements that should be carefully considered and integrated into the design to create a comfortable, attractive, and functional space that encourages children to explore, interact, and learn.

*6. Principle of naturalness.* The principle of naturalness emphasizes the importance of providing children with opportunities to connect with nature. Children have an innate curiosity about the natural world, and exposure to natural environments can have a positive impact on their development. Outdoor spaces in kindergartens should incorporate natural elements such as plants, water, and land, to create a stimulating environment that encourages exploration and discovery. By engaging with nature, children can learn about the growth and development of plants and animals, and develop a sense of appreciation for the natural world.

In addition to the benefits of nature for physical and mental health, exposure to nature can also stimulate creativity and imagination. Children are encouraged to observe and explore the natural world, which can inspire new ideas and promote problem-solving skills.

To design outdoor spaces that promote the principle of naturalness, it is important to ensure that there is ample green space, and to minimize the amount of hard paving in the outdoor area. Providing children with opportunities to interact with different types of plants, including fruit and vegetable gardens, can help to promote an understanding of how food is grown and an appreciation for healthy eating habits. Overall, incorporating natural elements into the design of kindergarten outdoor spaces can have a positive impact on children's development and wellbeing.

The natural environment can also promote children's mental health, and studies have shown that the more exposure children have to nature, the lower their self-esteem of bad behavior, anxiety, and depression. Therefore, in the outdoor environment design of kindergartens, we should pay attention to providing children with activities close to nature, encourage them to connect with the natural environment, not only help children recognize nature and the environment, but also improve children's self-awareness, release their own pressure, and constantly tap their own potential, so that children can grow up happily in kindergarten.

The Ibaraki Kindergarten in Japan is particularly noteworthy for its emphasis on outdoor spaces and natural elements. By including pools, grasslands, and hillsides, the kindergarten provides children with opportunities to explore and interact with the natural world. This can be very beneficial for their physical and mental development.

Similarly, the Beijing Yuecheng Courtyard Kindergarten uses floor-to-ceiling glass to create a visual connection between the indoor and outdoor spaces. This helps to bring natural light and fresh air into the interior, while also

providing children with a view of the outdoor environment. This can create a sense of calm and relaxation, and help to foster a connection with nature.

Overall, by incorporating natural elements into their design, kindergartens can create a more engaging and stimulating environment for children. This can help to promote their physical and mental health, as well as their cognitive and emotional development.

**Conclusions.** Six basic interior design principles of an inclusive preschool institution are revealed. The interior design of inclusive preschool institutions should be based on the principles of accessibility, openness, difference, creativity, safety, fun, and naturalness. Designers should take into account the specific

needs of children aged 3–6 years, create an open and flowing space, use child-friendly scales and layouts, and provide opportunities for independent thinking and exploration. Kindergarten interior design should focus on the needs of children's physical and mental development, and create a safe, and comfortable environment for them. Aesthetics is also important, with the use of color, shape, and texture to create an attractive and joyful space. Finally, the natural environment should be integrated into the design to promote children's physical and mental well-being, as well as their appreciation of nature. By following these principles, designers can create inclusive preschool interiors that foster child development and well-being.

#### Література:

1. Aljabreen H. Montessori, Waldorf, and Reggio Emilia: A Comparative Analysis of Alternative Models of Early Childhood Education. *International Journal of Early Childhood*. 2020. № 52. P. 337–353. DOI: <https://doi.org/10.1007/s13158-020-00277-1>.

2. Lawrence C. The effects of physical and social environments on the health and well-being of children and young people. 2019. 63 p. URL: <https://www.cyp.wa.gov.au/media/3913/report-the-effects-of-physical-and-social-environments-on-the-health-and-wellbeing-of-children-and-young-people.pdf> (Last accessed 01. 03.2023).

3. 陈静. 基于儿童行为特征的幼儿园室内活动空间设计研究:硕士学位论文,华南理工大学. 2018.

4. 何玉杨. 幼儿园室内色彩设计研究:硕士学位论文,中南林业科技大学. 2016.

5. 侯明承. 浅析儿童心理对幼儿园设计中室内空间色彩的影响作用研究: 硕士学位论文, 鲁迅美术学院. 2015.

6. Hong Kong Spring Children's Learning Centre. URL: <https://baijiahao.baidu.com/s?id=1675960128924829159&wfr=spider&for=pc> (Last accessed: 04.04.2023).

7. Japanese kindergarten entrance hall space. URL: <https://www.uibim.com/206308.html> (Last accessed: 04.04.2023).

8. Lee J., Kim D.-E., Choi S., & Byun N.-H. Kindergarten Facility and Environment Design Based on the Child Development Theory – Focused on Foreign Cases. *Journal of the Architectural Institute of Korea Planning & Design*. 2016. № 32(4). P. 49–58. DOI: [https://doi.org/10.5659/JAIK\\_PD.2016.32.4.49](https://doi.org/10.5659/JAIK_PD.2016.32.4.49).

9. 李润欣. 基于幼儿行为特征的幼儿园空间设计研究: 硕士学位论文, 长春工业大学. 2018.

10. 卢艺. 基于幼儿心理行为的幼儿园公共活动空间研究:硕士学位论文,成都理工大学. 2020.

11. 刘诗答. 基于幼儿心理行为特征的幼儿园建筑设计研究:硕士学位论文,成都理工大学. 2019.

12. 马立会. 基于儿童心理学的幼儿园活动空间设计研究:硕士学位论文,大连工业大学. 2016.

13. Rao N., Li H. "Eduplay": Beliefs and Practices Related to Play and Learning in Chinese Kindergartens. *Play and Learning in Early Childhood Settings. International Perspectives on Early Childhood Education and Development*. Edited by I. Pramling-Samuelsson, M. Fler. Dordrecht: Springer, 2009. Vol. 1. P. 97–116. DOI: [https://doi.org/10.1007/978-1-4020-8498-0\\_5](https://doi.org/10.1007/978-1-4020-8498-0_5).

14. Sheridan S. M., Edwards C. P., Marvin C. A., & Knoche L. L. Professional development in early childhood programs: Process issues and research needs. *Early Education and Development*. 2009. № 20. P. 377–401.



15. Smartno Time-sharing kindergarten activity space. URL: <http://mixinfo.id-china.com.cn/a-15960-1.html> (Last accessed: 04.04.2023).
16. Smartno Time-sharing kindergarten slide. URL: <http://www.yeyqf.com/h-nd-71.html> (Last accessed: 04.04.2023).
17. 孙媛媛. 音乐节奏对 (4-6岁) 幼儿拉丁舞教学 效果的影响. 硕士学位论文, 山东师范大学. 2020.
18. The Yutaka Kindergarten in Saitama, Japan. URL: <https://www.justeasy.cn/works/case/181> (Last accessed: 04.04.2023).
19. The Kanagawa Kindergarten Corridor, Japan. URL: <https://www.gooood.cn/kids-smile-lab.html> (Last accessed: 04.04.2023).
20. Абизов В., Баланенко М. Особливості дизайну інтер'єрів інклюзивних закладів дошкільної освіти. *Актуальні проблеми сучасного дизайну: збірник матеріалів III Міжнародної науково-практичної конференції*, м. Київ, 22 квітня 2021 року. Київ: КНУТД, 2021. Т. 2. С. 190–193.
21. Абизов В., Дзюбенко А. Особливості дизайну інтер'єрів закладів дошкільної освіти на прикладі центрів розвитку. *Актуальні проблеми сучасного дизайну: збірник матеріалів IV Міжнародної науково-практичної конференції*, м. Київ, 27 квітня 2022 року. Київ: КНУТД, 2022. Т. 2. С. 167–169.
22. Косенко Д. Ю., Собчук О. В., Чебикіна М. В., Вишневська О. В. Особливості дошкільних меблів у закладах Монтесорі та Вальдорфської педагогіки. *Технології та дизайн*. 2017. № 2 (23). URL: [http://nbuv.gov.ua/UJRN/td\\_2017\\_2\\_8](http://nbuv.gov.ua/UJRN/td_2017_2_8) (Дата звернення 01.03.2023)
23. Косенко Д. Ю., Столбухова А. Р. Художнє рішення поверхні стін в інтер'єрах закладів дошкільної освіти. *Наукові розробки молоді на сучасному етапі: тези доповідей XVIII Всеукраїнської наукової конференції молодих вчених та студентів* (18–19 квітня 2019 р.). Київ: КНУТД, 2019. Т. 1. С. 433–434.
24. Малік О. І., Абизов В. А., Булгакова Т. В. Типологічні особливості дитячих просторів в інтер'єрах громадських закладів сімейного відвідування. *Art and design*. 2022. № 3 (19). С. 111–119. DOI: <https://doi.org/10.30857/2617-0272.2022.3.9>.
- Alternative Models of Early Childhood Education. *International Journal of Early Childhood*. 52. 337–353. DOI: <https://doi.org/10.1007/s13158-020-00277-1> [in English].
2. Lawrence, C. (2019). The effects of physical and social environments on the health and well-being of children and young people. URL: <https://www.cyp.wa.gov.au/media/3913/report-the-effects-of-physical-and-social-environments-on-the-health-and-wellbeing-of-children-and-young-people.pdf> (Last accessed 01.03.2023).
3. Chen, Jing (2018). Research on the kindergarten indoor activity space design based on children's behavioral characteristics. Master's thesis. South China University of Technology [in Chinese].
4. He, Yuyang (2016). Research on interior colour design of kindergarten. Master's thesis. Central South University of Forestry Science and Technology [in Chinese].
5. Hou, M. Cheng (2015). Research on the influence of children's psychology on the role of colour in interior space in kindergarten design. Master's thesis. Lu Xun Academy of Fine Arts [in Chinese].
6. Hong Kong Spring Children's Learning Centre. URL: <https://baijiahao.baidu.com/s?id=1675960128924829159&wfr=spider&for=pc> (Last accessed: 04.04.2023).
7. Japanese KO kindergarten entrance hall space. URL: <https://www.uibim.com/206308.html> (Last accessed: 04.04.2023).
8. Lee, J., Kim, D.-E., Choi, S., & Byun, N.-H. (2016). Kindergarten Facility and Environment Design Based on the Child Development Theory – Focused on Foreign Cases. *Journal of the Architectural Institute of Korea Planning & Design*. 32(4). 49–58. DOI: [https://doi.org/10.5659/JAIK\\_PD.2016.32.4.49](https://doi.org/10.5659/JAIK_PD.2016.32.4.49) [in English].
9. Li, Runxin (2018). Research on the design of kindergarten space based on the behavioral characteristics of young children. Master's thesis. Changchun University of Technology [in Chinese].
10. Lu, Yi (2020). Research on public activity space of kindergarten based on children's psychological behavior. Master's thesis. Chengdu University of Technology. [in Chinese]
11. Liu, Shida. (2019). Research on kindergarten architectural design based on children's psychological behavior characteristics. Master's

#### References:

1. Aljabreen, H. (2020). Montessori, Waldorf, and Reggio Emilia: A Comparative Analysis of

- thesis. Chengdu University of Technology. [in Chinese]
12. Ma, L. Hui. (2016). Research on the design of kindergarten activity space based on child psychology. Master's thesis. Dalian University of Technology. [in Chinese]
13. Rao, Nirmala & Li, Hui. (2008). "Eduplay": Beliefs and Practices Related to Play and Learning in Chinese Kindergartens. Play and Learning in Early Childhood Settings. International Perspectives on Early Childhood Education and Development. I. Pramling-Samuelsson, M. Fler (Ed.). (Vol 1). Dordrecht: Springer. [in English] DOI: [https://doi.org/10.1007/978-1-4020-8498-0\\_5](https://doi.org/10.1007/978-1-4020-8498-0_5)
14. Sheridan, S. M., Edwards, C. P., Marvin, C. A., & Knoche, L.L. Professional development in early childhood programs: Process issues and research needs. Early Education and Development. 2009, 20. P. 377–401. [in English]
15. Smartno Time-sharing kindergarten activity space. URL : <http://mixinfo.id-china.com.cn/a-15960-1.html> (Last accessed: 04.04.2023).
16. Smartno Time-sharing kindergarten slide. URL : <http://www.yeyqf.com/h-nd-71.html> (Last accessed: 04.04.2023).
17. Sun, Yuanyuan. (2020). The effect of music rhythm on the teaching effect of Latin dance for (4-6 years old) young children. Master's thesis. Shandong Normal University. [in Chinese]
18. The Yutaka Kindergarten in Saitama, Japan. URL : <https://www.justeasy.cn/works/case/181> (Last accessed: 04.04.2023).
19. The Kanagawa Kindergarten Corridor, Japan. URL : <https://www.gooood.cn/kids-smile-lab.html> (Last accessed: 04.04.2023).
20. Abyzov, V., Balanenko, M. (2021). Osoblyvosti dyzainu inte'rieriv inkliuzyvnykh zakladiv doshkilnoi osvity [Features of interior design of inclusive preschool education institutions]. Aktualni problemy suchasnoho dyzainu - Actual problems of modern design: a collection of materials of the III International Scientific and Practical Conference, (2, 190-193). Kyiv: KNUTD [in Ukrainian].
21. Abyzov, V., Dziubenko, A. (2022). Osoblyvosti dyzainu inter'ieriv zakladiv doshkilnoi osvity na prykladi tsestriv rozvytku [Peculiarities of the interior design of preschool education institutions using the example of development centers]. Aktualni problemy suchasnoho dyzainu – Actual problems of modern design: a collection of materials of the IV International Scientific and Practical Conference. 2. 167–169. Kyiv: KNUTD [in Ukrainian].
22. Kosenko, D. Yu., Sobchuk, O. V., Chebykina M. V., Vyshnevska O. V. (2017). Osoblyvosti doshkilnykh mebliv u zakladakh Montessori ta Valdorfskoi pedahohiky [Peculiarities of preschool furniture in Montessori and Waldorf pedagogy institutions]. Tekhnolohii ta dyzain – Technologies and design. 2 (23). URL: [http://nbuv.gov.ua/UJRN/td\\_2017\\_2\\_8](http://nbuv.gov.ua/UJRN/td_2017_2_8) (Last accessed: 01.03.2023) [in Ukrainian].
23. Kosenko, D. Yu., Stolbukhova, A. R. (2019). Khudozhnie rishennia poverkhni stin v inter'ierakh zakladiv doshkilnoi osvity [Artistic solution of the surface of the walls in the interiors of preschool education institutions]. Naukovi rozrobky molodi na suchasnomu etapi: tezy dopovidei XVIII Vseukrainskoi naukovoï konferentsii molodykh vchenykh ta studentiv (18–19 kvitnia 2019) – Scientific developments of youth at the current stage: abstracts of reports of the XVIII All-Ukrainian Scientific Conference of Young Scientists and Students (April 18–19, 2019. 1. 433–434. Kyiv: KNUTD [in Ukrainian].
24. Malik, O. I., Abyzov, V. A., Bulhakova, T. V. (2022). Typolohichni osoblyvosti dytiachykh prostoriv v inter'ierakh hromadskykh zakladiv simeinoho vidviduvannia [Typological features of children's spaces in public family visit interiors]. Art and design. 3 (19). 111–119. DOI: <https://doi.org/10.30857/2617-0272.2022.3.9> [in Ukrainian].

## ПРИНЦИПИ ДИЗАЙНУ ІНТЕР'ЄРУ ІНКЛЮЗИВНИХ ДОШКІЛЬНИХ ЗАКЛАДІВ

БУЛГАКОВА Т. В., ЦЯО ДАН, ЛУ ІНЦЗЯНЬ

Київський національний університет технологій та дизайну, Київ, Україна  
Київський інститут Технологічного університету Цілу, Цзінань, Китай

**Метою** даного дослідження є виявлення принципів формування інтер'єру інклюзивного дошкільного закладу для дітей віком 3-6 років на основі аналізу сучасних ідей інклюзивного дизайну дитячого садка та досліджень дитячої поведінкової психології.

**Методологія.** У роботі використовуються такі теоретичні та спеціальні методи дослідження: аналіз літературних джерел та нормативної літератури з тематики досліджень, порівняльний аналіз проектів, що реалізуються в рамках інклюзивних дитячих садків, методи систематизації, синтезу та узагальнення отриманих даних.

**Результати.** Виявлено шість основних принципів формування інтер'єру інклюзивного дошкільного закладу для дітей 3-5 років, засновані на поведінковій психології дітей, а також аналізі сучасної практики проектування внутрішнього простору дитячих садків. Це "принцип відкритості", "принцип відмінності", "принцип творчості", "принцип безпеки", "принцип веселоців", "принцип природності". На підставі даних принципів надалі може бути розроблена сучасна методика дизайну інтер'єру інклюзивних дитячих садків, яка включатиме певний набір прийомів у рамках кожного принципу, а результатом буде простір для дітей, що дає почуття безпеки, комфорту, зацікавленості і сприяє всебічному гармонійному розвитку дитини.

**Наукова новизна.** Виявлено принципи дизайну інтер'єру інклюзивних дошкільних закладів, які допоможуть дизайнерам у створенні гармонійного простору інклюзивного дитячого садка для всебічного розвитку особистості дитини. Дане дослідження сприяє подальшому розвитку дизайну інтер'єру інклюзивних дитячих садків з урахуванням нових потреб суспільства у сучасних умовах.

**Практичне значення.** Результати цього дослідження можуть бути використані у практиці дизайну інтер'єру інклюзивних дитячих садків та учбовому проектуванні студентів за освітньою програмою «Дизайн середовища».

**Ключові слова:** *дизайн; інтер'єр; інклюзивний дошкільний заклад; дитячий садок; принципи дизайну інтер'єру.*

ІНФОРМАЦІЯ  
ПРО АВТОРІВ:

**Булгакова Тетяна Володимирівна**, канд. техн. наук, доцент, доцент кафедри дизайну інтер'єру і меблів, Київський національний університет технологій та дизайну, ORCID 0000-0002-6523-5770, **e-mail:** bulgakova358@ukr.net

**Qiao Dan**, магістр, факультет дизайну, Київський національний університет технологій та дизайну, Kyiv Institute at Qilu University of Technology, ORCID 0009-0004-4446-0110, **e-mail:** 674711147@qq.com

**Lu Yingjian** магістр, факультет дизайну, Київський національний університет технологій та дизайну, Kyiv Institute at Qilu University of Technology, ORCID 0009-0000-2370-1932, **e-mail:** 1132529907@qq.com

**Цитування за ДСТУ:** Bulhakova T. V., Qiao D., Lu Y. Interior Design Principles OF Inclusive Preschools. *Art and design*. 2023. №1(21). С. 14–24.

[https://doi.org/  
10.30857/2617-  
0272.2023.1.1](https://doi.org/10.30857/2617-0272.2023.1.1)

**Citation APA:** Bulhakova, T. V., Qiao, D., Lu, Y. (2023) Interior Design Principles OF Inclusive Preschools. *Art and design*. 1(21). 14–24.