

УДК 7.012+372.2

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Kyiv National University of Technologies and DesignDOI:10.30857/2617-
0272.2021.3.2.**FEATURES OF INTERIOR DESIGN OF INCLUSIVE
PRESCHOOL INSTITUTIONS**

The purpose is determination of the design features of the subject-spatial environment for children with disabilities. Identifying the features and aspects of artistic and color solutions when organizing the modern inclusive space for children with special needs, as well as the feasibility of using special equipment and its location in the space of preschool institutions.

Methodology. The research is based on a systematic approach that allows us to consider the architectural environment of preschool educational institutions as a hierarchically subordinate integrity. We also used methods of historical, comparative and typological analysis, and field surveys.

Results. The article considers the features of the design of the subject-spatial environment for children with disabilities. Particular attention is paid to the creation of special therapeutic zones when planning premises for children with disabilities. The application of harmonious and expressive artistic and coloristic solutions, as well as taking into account the availability of special equipment and its appropriate placement in an inclusive space are considered.

Scientific novelty is to determine the features of the formation of subject-spatial environment of inclusive preschool education and systematization of previous research on this topic.

Practical significance is to develop project recommendations for the design of inclusive preschools, determine the compliance of their subject-spatial environment to modern requirements and modern regulations, identify the impact of new trends in the formation of the internal environment of kindergartens for children with special needs.

Keywords: design; inclusive space; subject-spatial environment; children with special needs.

Introduction. Analysis of previous researches. The problem of inclusive education in Ukraine is quite acute. There are 167 thousand children with disabilities in the country, which is 2% of the total child population [9]. Only a tenth of them receive education in inclusive institutions. At the same time, even existing institutions with an emphasis on inclusive space largely do not meet the basic requirements for creating an inclusive subject-spatial environment, not to mention the features of their design.

Inclusive preschool institutions have a special role to play in the field of interior design. According to UNESCO's definition, inclusive education is *a process of addressing and responding to the diversity of needs of children through increasing participation in learning, cultures and communities.*

In general, for the majority of people the concept of inclusion is associated only with persons who have a *disability* – a measure of loss

of health due to a disease, injury (its consequences) or birth defects, which, when interacting with the external environment, can lead to a restriction of a person's vital activity. Thus, persons with disabilities are persons who have persistent physical, mental, intellectual or sensory disorders that may interfere with the full and effective participation of such persons in the life of society on an equal basis with others [14].

In particular, children in need of inclusive education may not have a disability, but they have Special Educational Needs (SEN). According to the law of Ukraine On Education, a child with SEN is a person who needs additional permanent or temporary support in the educational process in order to ensure his right to education [13].

In inclusive groups, children with special educational needs are involved in the educational process. They communicate with peers, find friends, join games and creative activities, become open and feel more confident.

All of this contributes to language, cognitive, social, and emotional development. Other children (those without SEN) learn tolerance, the ability to sympathize, help, and support. And educators and specialists better understand the needs and characteristics of children, gain new experience, master various pedagogical techniques. Successful participation in inclusive groups is a great start for further education [8].

The goal of inclusive learning is to improve the learning environment in which the educator and students are open to diversity, where students' needs and opportunities for success are met. The intensification of modern trends in the development of kindergartens raises the problem of compliance of the design of inclusive educational institutions with these requirements.

The topic of decoration and furnishing in children's educational institutions is widely considered in the information manual *New Educational Space*, author D.Yu. Kosenko [11]. The concepts of *disability*, *low mobility groups*, *accessibility*, barriers to the participation of people with disabilities in society and ways to overcome them are discussed in the textbook *Inclusive Education for Children With Special Needs* [4]. Regarding the stay of children with special needs in the general space of the kindergarten, as well as the organization of their education are considered in textbooks by A.A. Kolupaev, O.M. Taranchenko [3]. The issue of disability, inclusion, universal design, the issue of arranging space for children with special needs is widely discussed on educational sites, health care sites, as well as specialized sites for organizing the internal and external environment of children's educational institutions [2, 15, 16]. Mandatory rules for organizing space in inclusive educational institutions can also be found in the SBC and resolutions of the Cabinet of Ministers of Ukraine [5–7, 12].

Problem statement. Current trends in the development of kindergartens and inclusive preschools make it necessary to determine the design of the subject-spatial environment for children with disabilities and address such pressing issues as the creation of special

therapeutic areas when planning facilities for children with disabilities, the use of harmonious and expressive artistic and color solutions, as well as taking into account the availability of special equipment and its appropriate placement in an inclusive space.

Results of the research. One of the most important issues when designing an inclusive space, like any other, is its proper zoning. At this stage, the location of the main, secondary and auxiliary areas of the premises is resolved. Regardless of the layout of the design object, its total area, or the chosen interior design style, the issue of visual division of space into separate functional zones is always part of the task of using each square meter of premises in the development of a design project. When planning preschool institutions, it is necessary to take into account the rational location of such areas: the main ones are a changing room, a game room, a bedroom, a study room; secondary ones are a mini-kitchen, a bathroom, a storage room for storing toys and equipment, a storage room for storing household accessories. Also, for inclusive preschools, it is desirable to provide auxiliary zones. These include the following zones: art therapy, agrotherapy, and sand therapy.

The term art therapy was first used by Adrian Hill in 1938 when describing his project and soon it became widespread. In the narrow sense of the word, art therapy usually refers to therapy with the help of visual art in order to analyze its positive impact on the psychoemotional state of a person [1]. In foreign practice, such forms of children's therapy as *agrotherapy* – a type of therapy that implies harmony between man and nature, thus allowing a person with special needs to find harmony with himself, ie: calm down at the right time, learn to take care of himself, etc. Such zones are created with the help of various plants and equipment for their placement in space and care for them. *Sand therapy* is a type of therapy when a child develops such abilities as fine motor skills, concentration, accuracy, etc. with the help of a special zone with sand or

other small material. The location of such therapy zones can be divided into two ways of using it: the first is to combine this auxiliary zone with the play area, the second is to use it as a transition from the locker room to the play area, from the play area to the study area, from the study area to the bedroom.

Based on the study, the planning of the subject-spatial environment for children with disabilities was developed, taking into account special therapeutic zones (fig. 1.).

This study applies the above principles of zoning of premises, namely – the presence of primary and secondary zones in their harmonious and more appropriate combination with auxiliary zones. Opposite the main entrance to the group room from the locker room is the *agrotherapy* area, then getting directly to the group we see the *sand therapy* area, which is located next to the bathroom (after all, during the children stay and activity in this area, they have a great opportunity to get dirty, as well as stain the floor). This area is combined with a large room with two main areas – a dining and study area and a game area. The project provides for the possibility of combining and/or transforming them into each other, as well as a multi-variant arrangement of furniture and equipment (fig. 2). This room with two main zones "cooperates" well with secondary ones (storage area, caregiver's work area) and an auxiliary area of *art therapy*, which also serves as a transition to the next room with the placement of more peaceful zones for its purpose. This is primarily a bedroom – a recreation area for children, which is the main one, and its center is the area of air-breathing exercises, which is no less important especially for children with disabilities. In this room there are also areas of *art therapy* and *agrotherapy* which harmonize well with the main purpose of this room, because both have a calming nature. This room also provides a storage area and special equipment for children with special needs and a work area for educators.

The next important issue is the application of expressive compositional-spatial

and coloristic solutions of kindergartens. Preschoolers are very sensitive and receptive to the environment. Therefore, it is extremely important to choose a harmonious and organic artistic and color solution of the interior, as well as to use it correctly in different areas, taking into account their functional purpose. In this regard, the most harmonious range of colors should be used in different rooms, namely the use in the context of the purpose of the premises and areas of bright, clean colors such as red, orange, yellow, green, blue, blue, purple, but necessarily in combination and contrast with the background pastel, slightly muted colors, so that the space is not too aggressive for the child's eye. It is also advisable to avoid dark and indistinct colors, such as black, brown, and gray. Another means of color solutions is to abandon monochrome interiors so that the child can learn and perceive the world in different colors, which contributes to the formation of a healthy and stable psyche

The study identifies several important factors that can be used to create a harmonious color scheme for the interior of an inclusive preschool, as well as for any other institution (premise) that has certain features in the technical task. This should be done at the first stages of justifying the design solution and visualizing the overall interior concept.

The first factor is the so-called three-color rule. In other words, the interior should contain no more and preferably at least three colors (with the exception of monochrome interiors). This factor is important for pre-school institutions, especially those with inclusive groups. First, if there are a large number of basic colors, the child will lose concentration, which is important for the education and rehabilitation of children with special needs. It can also contribute to the appearance of mental disorders such as confusion and irritability. Second, by having fewer colors, the child loses interest in the environment around him and the processes that should take place in it, simply put – the child becomes bored.

The second factor is the use of an appropriate compositional and color accent. Any room of a preschool educational institution, in most cases, needs to emphasize what will unconditionally and primarily attract the child's attention.

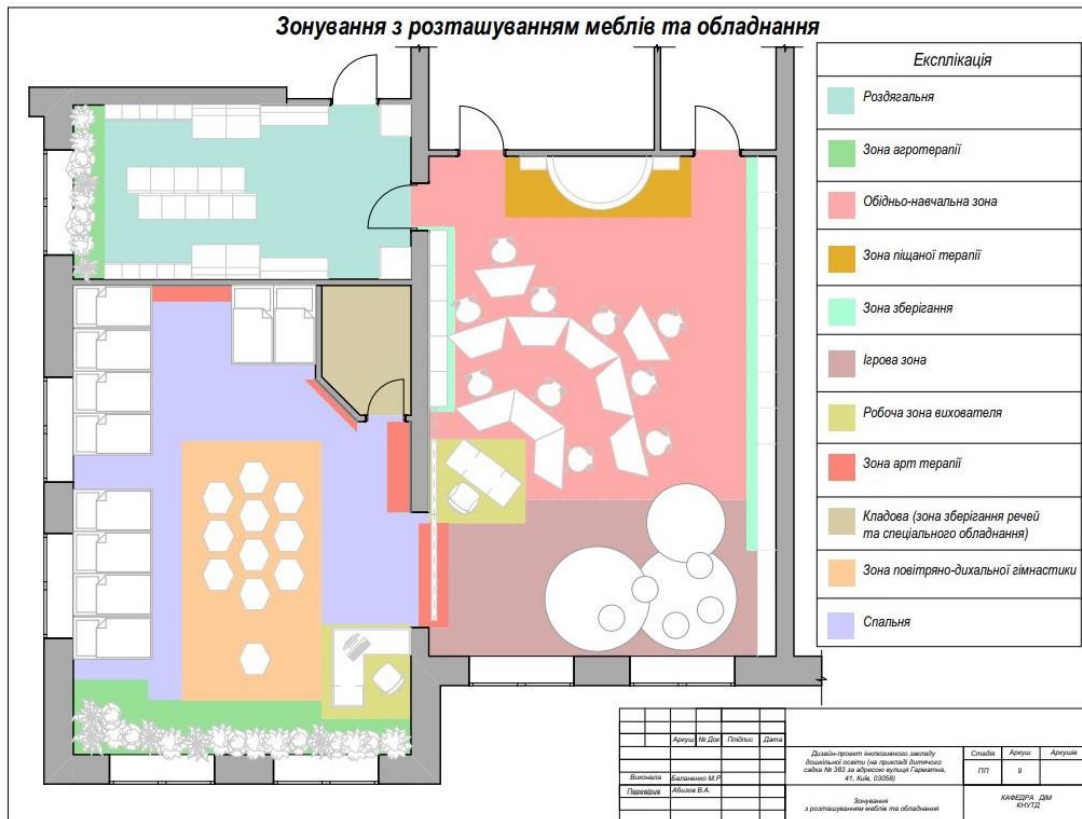


Fig. 1. Example of planning a subject-spatial environment for children with disabilities, taking into account the location of special therapeutic zones

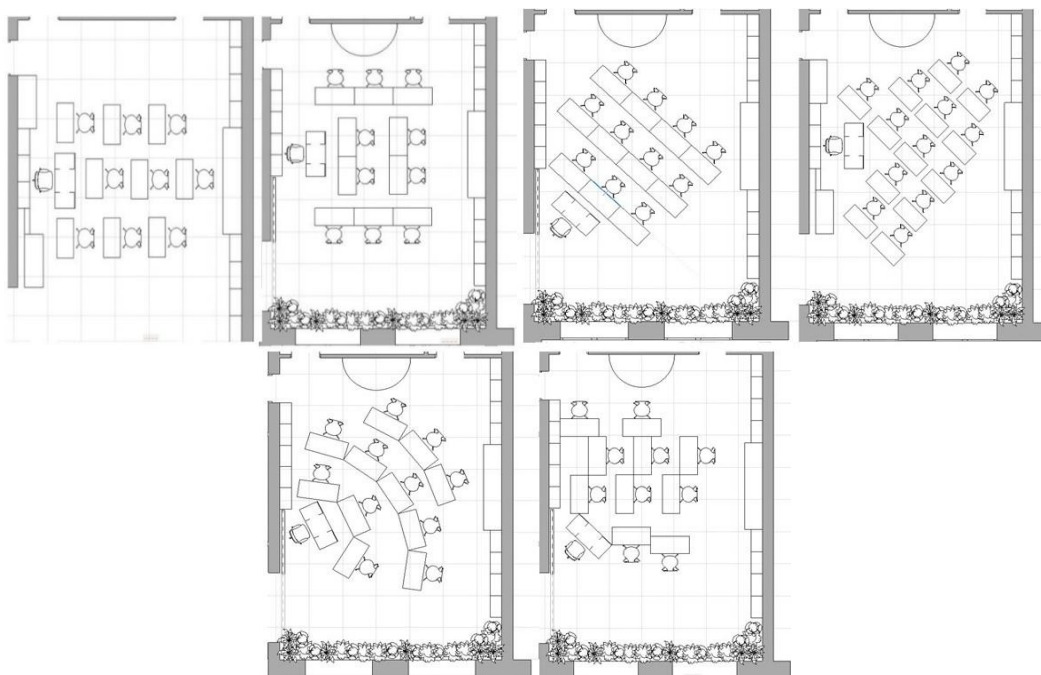


Fig. 2. Examples of variant placement of furniture and equipment for the dining and study area

The third factor that is mostly important for specialized rooms in our case, preschools with inclusive groups, is the choice of the main color in the direction or specificity of the room. For example, the use of green in educational institutions should be preferred. Green is the color of life, a symbol of nature, harmony, kindness, prosperity and development. It is the green part of the spectrum that is most easily perceived by the eye. Based on research, it is known that it is the green color that increases

the effectiveness of the *educational process*. This is probably why designers, psychologists, and other specialists involved in designing and organizing space in preschool institutions, schools, lyceums, and other educational institutions recommend using green as one of the main, predominant colors.

The last, fourth factor is the use of additional (auxiliary) colors, where the main recommendation is to use inactive shades of one or two primary colors.



a



b



c



d

Fig. 3. Examples of special equipment for children with special needs, which can be found in the catalog of the company Rehab Medical, which was created in the UK in 1989 by Pankaj Kushwaha [10]: a – verticalizer; b – head retention system; c – recumbent scooter; d – swing for vestibular development

Along with what is indicated in the creation of design projects for inclusive preschool institutions, it is advisable to use special equipment for children with special needs with its appropriate location in the interiors. The conducted researches allowed to recommend expediency of use of such

equipment: verticalizers – means for passive verticalization of the user to whom it is difficult to support a vertical pose independently; head restraint system – allows children to maintain an upright position, allowing the head to rotate at full amplitude and promoting the development of neck muscles; sitting scooter –

an aid for the movement of children weighing up to 25 kg; means of sensory integration – this type provides a powerful impetus to the development of the vestibular apparatus and most other sensory systems (visual, auditory, sense of space) [10]. These types of equipment should have a suitable storage space, preferably in the storage area for storing toys and equipment. When using them during the educational process, it is necessary to take into account the functional purpose of the zone with certain equipment. For example, verticalizers and head retention systems should be placed in the training area, while a sitting scooter and sensory integration tools should be placed in the play area. Examples of such equipment can be seen in Fig. 3.

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ОСОБЛИВОСТІ ДИЗАЙНУ ІНТЕР'ЄРІВ ІНКЛЮЗИВНИХ ЗАКЛАДІВ ДОШКІЛЬНОЇ ОСВІТИ

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Метою роботи є визначення особливостей дизайну предметно-просторового середовища для дітей з обмеженими можливостями. Виявлення особливостей та аспектів художньо-образних та колористичних рішень організації сучасного інклюзивного простору для дітей з особливими потребами, а також доцільність використання в ньому спеціального обладнання та його розташування в просторі дошкільних закладів.

Методологія. Дослідження базується на системному підході, який дозволяє розглядати архітектурне середовище дошкільних навчальних закладів як ієрархічно підпорядковану цілісність. Використано також методи історичного, порівняльного та типологічного аналізу, натурних обстежень.

Результати. В статті розглянуто особливості дизайну предметно-просторового середовища для дітей з обмеженими можливостями. Особливу увагу приділено створенню спеціальних терапевтичних зон при плануванні приміщень для дітей з обмеженими можливостями. Розглянуто застосування гармонійних і виразних художньо-колористичних вирішень, а також урахування наявності спеціального обладнання та його відповідного розміщення в інклюзивному просторі.

Наукова новизна. Полягає у визначенні особливостей формування предметно-просторового середовища інклюзивних закладів дошкільної освіти, систематизації попередніх досліджень по даній тематиці.

Практична значущість. Полягає у розробленні проектних рекомендацій

ОСОБЕННОСТИ ДИЗАЙНА ИНТЕРЬЕРОВ ИНКЛЮЗИВНЫХ УЧРЕЖДЕНИЙ ДОШКОЛЬНОГО ОБРАЗОВАНИЯ

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Целью работы является определение особенностей дизайна предметно-пространственной среды для детей с ограниченными возможностями, выявление особенностей и аспектов художественно-образных и колористических решений организации современного инклюзивного пространства для детей с особыми потребностями, а также целесообразности использования в нем специального оборудования и его расположение в пространстве дошкольных учреждений.

Методология. Исследование базируется на системном подходе, который позволяет рассматривать архитектурную среду дошкольных учебных заведений как иерархически подчиненную целостность. Используются также методы исторического, сравнительного и типологического анализа, натурных обследований.

Результаты. В статье рассмотрены особенности дизайна предметно-пространственной среды для детей с ограниченными возможностями. Особое внимание уделено созданию специальных терапевтических зон при планировке помещений для детей с ограниченными возможностями. Рассмотрено применение гармоничных и выразительных художественно-колористических решений, а также учет наличия специального оборудования и его соответствующего размещения в инклюзивном пространстве.

Научная новизна заключается в определении особенностей формирования предметно-пространственной среды инклюзивных учреждений дошкольного образования, систематизации предыдущих исследований по данной тематике.

Практическая значимость состоит в разработке рекомендаций по трансформации

щодо проектування інклюзивних закладів дошкільної освіти, визначенні відповідності їх предметно-просторового середовища до вимог сучасності та сучасних нормативних документів, виявленні впливу нових тенденцій на формування внутрішнього середовища дитячих садків для дітей з особливими потребами.

Ключові слова: дизайн; інклюзивний простір; предметно-просторове середовище; діти з особливими потребами.

обычных групп дошкольного учреждения в инклюзивные, определены соответствия предметно-пространственной среды с требованиями современности и новых нормативных документов, рассмотрено влияние новых тенденций на формирование внутренней среды детских садов в сады для детей с особыми потребностями.

Ключевые слова: дизайн; инклюзивный пространство; предметно-пространственную среду; дети с особыми потребностями.

ІНФОРМАЦІЯ
ПРО АВТОРІВ:

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Цитування за ДСТУ: Abyzov V. A., Balanenko M. R., Volynets T. V. Features of Interior Design of Inclusive Preschools. *Art and design*. 2021. №3(15). С. 21–29.

Citation APA: Abyzov, V. A., Balanenko, M. R., Volynets, T. V. (2021) Features of Interior Design of Inclusive Preschools. *Art and design*. 2021. №3(15). 21–29.

[https://doi.org/
10.30857/2617-
0272.2021.3.2](https://doi.org/10.30857/2617-0272.2021.3.2)