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THE ROLE OF INTERACTIVE ELEMENTS IN DEVELOPING CHILDREN'S SKILLS IN URBAN SPACES"

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ABSTRACT

Urban spaces designated for practicing activities for children play a major role in shaping the child's personality in the early stages of his life, especially early childhood, and contribute greatly to achieving a major part of the child's skills. Good design and coordination of urban spaces aims primarily to improve the function of urban spaces. The main ones, which contribute to developing the child's targeted skills from these fields. The main research problem is the weak clarity of the relationship between interactive elements for children in early childhood and the skills intended to be imparted to the child within these spaces, for this age stage. This research paper aims to how to use interactive design elements to support the function of urban spaces for children, using the descriptive approach in describing skills.

The basic principles desired for urban spaces, then the descriptive analytical approach in identifying and describing the elements and interactive methods that can be used within those spaces, then the deductive approach to deduce the relationship between the child's targeted skills in urban spaces and the proposed interactive methods. Accordingly, the result of this research paper is that the child's interactive methods are divided into three sections, including physical interaction, and the determinants of urban space, such as walls, furniture, and floors, can be exploited to support the child's skills. It was also established that there is a relationship between children's skills and interactive material methods for developing the built environment for children's spaces.

KEYWORDS: Interactive Elements , Children's Skills , Urban Spaces

"دور العناصر التفاعلية في تطوير مهارات الأطفال في الفراغات العمرانية"

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الملخص

تلعب الفراغات العمرانية المخصصة لممارسة الأنشطة بالنسبة للأطفال دوراً كبيراً في تكوين شخصية الطفل في مراحل حياته الأولى، وبخاصة مرحلة الطفولة المبكرة، وتساهم بشكل كبير في تحقيق جزء رئيسي من مهارات الطفل، فالتصميم والتنسيق الجيد للفراغات العمرانية، يَهدف في المقام الأول إلي تحسين وظيفة الفراغات العمرانية الرئيسية، ومنها يُساهم في تطوير المهارات المستهدفة للطفل من هذه الفراغات.

وتَتمثل مشكلة البحث الرئيسية في ضعف وضوح العلاقة بين العناصر التفاعلية للأطفال في مراحل الطفولة المبكرة والمهارات المستهدف إكسابها للطفل داخل هذه الفراغات، لهذه المرحلة العمرية، وتهدف هذه الورقة البحثية إلى كيفية استخدام

العناصر التصميمية التفاعلية لدعم وظيفة الفراغات العمرانية للأطفال، باستخدام المنهج الوصفي في وصف المهارات الأساسية المرجوة من الفراغات العمرانية، ثم المنهج الوصفي التحليلي في حصر ووصف العناصر والأساليب التفاعلية التي يمكن استخدامها داخل تلك الفراغات، ثم المنهج الاستنباطي لاستنباط العلاقة بين المهارات المستهدفة للطفل في الفراغات العمرانية والأساليب التفاعلية المقترحة. وعليه فنتيجة هذه الورقة البحثية تتلخص في ان الأساليب التفاعلية للطفل تنقسم الى ثلاث اقسام من بينها التفاعل المادي، كما يمكن استغلال محددات الفراغ العمراني من حوائط وفرش وأرضيات في دعم مهاره الطفل. كما تم الوصول الى وجود علاقة بين مهارات الطفل والأساليب التفاعلية المادية لتطوير البيئة العمرانية لفراغات الأطفال.

الكلمات المفتاحية: العناصر التفاعلية، مهارات الأطفال، الفراغات العمرانية.

1.1 INTRODUCTION

In light of the technological development in this era and children's connection to this development, some elements and methods are currently being included that will increase children's activity and skill levels, such as interactive walls and floors and other elements that meet the child's needs in terms of entertainment and skills at the same time. Urban design, or even interior design, at the present time plays an important role in influencing the child and making him closely associated with space, which achieves many of the skills required of the child at every specific age stage, whether motor, mental, or social skills .

1.2 Research problem

The main problem in this research paper is the weak clarity of the relationship between the interactive elements in urban spaces, and the skills intended to be acquired by the child through activities within those spaces, so the basic question for the research is:

How can interactive elements support and develop children's skills in urban spaces?

In order to answer the central question of the research, the following secondary questions must be answere:

What are the skills intended to be imparted to children in urban spaces?

What are the techniques and elements of interactive design that can support the function of urban spaces?

What is the mutual relationship between the interactive elements and the objectives of the activity practiced within the spaces?

1.3 Research objectives

The research paper aims to provide an answer to the central question of the research and the sub-questions emerging from it, by deducing the relationship between the interactive elements and the skills intended to be imparted to children through activities practiced in urban spaces. The research paper also aims to describe and analyze the techniques and elements of interactive design that can support the function of urban spaces, and to study the reciprocal relationship between the interactive elements of design in open spaces and the objectives of the activity practiced within the urban spaces.

1.4 Research Methodology:

To achieve the previous research objectives, the study was divided into three main parts:

Descriptive approach: This describes the basic skills targeted by the blanks.

Descriptive and analytical approach: to describe and analyze interactive design methods and techniques that can be used within urban spaces.

Deductive approach: This is to extract the relationship between the targeted skills of urban spaces and the proposed interactive methods, including access to interactive technologies and methods that can be used for development.

1.5 First: Theoretical study:

1.5.1 The concept of skill for children:

A skill is a sequential, sequential movement that is usually acquired through continuous training. If it is acquired and learned, it becomes an ingrained habit in the child's behavior as he performs it without prior thinking about its steps or stages.

Skills are among the basic requirements that a child needs in order to adapt to his society, and they are numerous and endless because children in the pre-school stage are not able to master the complex skills that require physical and nervous maturity to a certain degree, but they are able to fully master some simple skills that prepare them to acquire skills. Complex vehicle.

Among the goals of pre-school education is to provide the child with a set of skills and develop them in accordance with the level of development and maturity of children at this stage.

Training children to acquire basic learning skills must begin from the beginning of their enrollment in kindergarten, in a gradual manner that takes into account the levels of growth, maturity, and individual differences between children.

1.5.2 Targeted skills from activities practiced within urban spaces for the specific age stage:

The urban spaces aim to help pre-school children achieve comprehensive development for each child in the mental, physical, motor, emotional, and social fields.[1] Hence, the activities practiced within the urban spaces are based on specific goals to achieve the child's needs, which are defined in five axes: [2].

- The first axis: related to the child himself and his development (physical - mental - social...).
- The second axis: It is related to social and national goals related to the growth of national feeling.
- The third axis: related to preparation for the primary stage.
- The fourth axis: related to the child's security and the safety of his environment.
- The fifth axis: It is related to developing concepts towards developing a love of work and science.

By analyzing the needs of the child at the age stage targeted in the study, the needs were classified into physical growth needs, mental development needs, needs related to the self, needs related to interactive behavior, and needs related to his psychological structure. Thus, the targeted basic skills were classified according to meeting the child's psychological and social needs. In the urban space so that he can adapt inside it and lead a normal life, which the designer tries hard to take into account when developing the design of the urban space suitable for the child, and is summarized in the following **fig**.1.

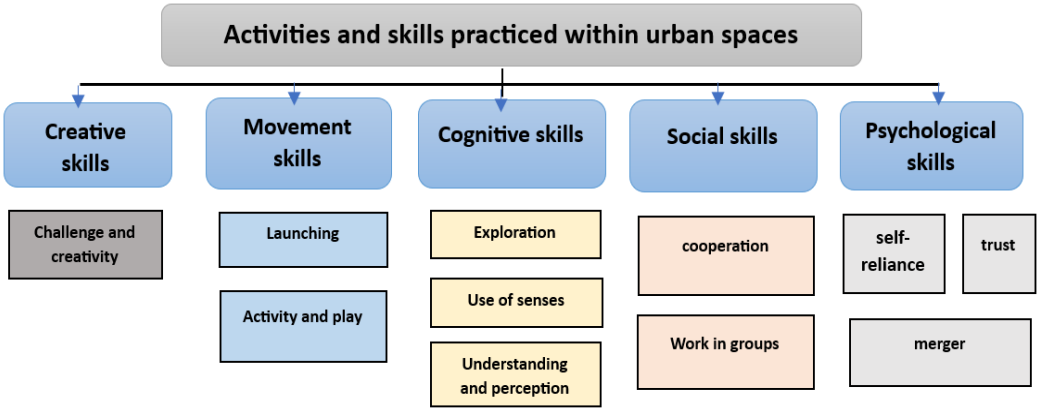


Fig.1. Activities and skills within urban spaces.

Psychological skills for children: Psychological skills are considered one of the basic elements in the formation of a child's personality from the beginning of his founding. This skill depends on the behaviors that the child practices inside and outside urban spaces, and among these skills are (confidence - self-reliance - a sense of responsibility).

Social skills for children: This skill is one of the basic pillars on which the child's personality is based in the pre-school stage. Through it, he can interact with others, integrate with them, share their games, and cooperate with them in completing them. He can also learn the concept of self-independence from others and self-reliance in Many of the work and tasks that he performs, he also learns the skill of participating with his peers in playing, working in groups, etc.

Cognitive skills for children: The child's learning and acquisition of mental skills does not depend on his innate mental preparations alone, but rather is due to his special environmental circumstances and capabilities, to the opportunities available to him to acquire them, and to the guidance he receives during training to acquire them. This is one of the most important mental skills that the child acquires.

Movement skills for children: Movement skills are among the basic elements in shaping a child's development, as almost no activity is devoid of movement and active interaction. Movement skills are of many types, including activity, play, freedom, etc.

Creative skills: Ensuring the development of a child's thinking and creativity skills from a young age is very important. Daily challenges expand his understanding of this world in cooperation with a supportive environment that allows the child to become more confident in his views and opinions through training, practice, exploration, encouragement, play and interaction with the surrounding environment.

1.6 Interactive methods and elements.

Scientists have disagreed about the concept of interactivity since its appearance in 1950 in the book "The human use of humans" and there have been many definitions around it. Interactivity can be defined and looked at from more than one perspective. Wiener 1950 explained that interactivity is an idea of reactions and a means of controlling the communication system. [3] Williams and Rogers 1988 also stated that interactivity is the extent of participation in and control over the communication process such that roles can be exchanged between both sender and receiver.[4] Steuer 1992 stated that it is the degree to which users can modify the form and content of the message in the medium environment at the time [5] Fortin 1997 defined it as the degree to which a communication system can allow one or more end users to communicate alternately as senders with one or many other users, whether in real-time or synchronous communication.[6]

And specify Dr. Abdul Rahman Muhammad Al-Shami 2015 that interactivity is a two-way communication that occurs between two users or a group of users, or takes place between the user and the machine and takes place in a real environment or a virtual environment that enables the exchange of audio or visual symbols or both together.[7]

Interactive methods are methods that aim to encourage interaction and effective participation of children. These methods include the use of discussions, group projects, and games. These methods aim to stimulate children's thinking, develop their mental, social, and cooperative skills, and enhance their interaction and life participation.

From the definitions of interactivity mentioned above by scientists and researchers, it can be concluded that interactivity is in spaces

"It is a means of communication that links the user to the space or element through the user's awareness, clarity and ease of use, and allowing reactions from the user, whether motor, intellectual, auditory, or visual, without the intervention of any intermediary, and it takes place in a real or virtual environment."

1.7 The role of the architect in coordinating the urban space to design interactive elements:[8]

The designer can predict the child's behavior towards the interactive product through his study of the psychological aspect and his understanding of the individual's needs. He can direct human behavior by stimulating certain motives that motivate them to do the actions that we want them to perform and prevent them from other actions that we do not want them to perform.

The designer can control the child's behavior and direct him to scientific, moral, and aesthetic values in this indirect way, thinking that he is just playing and having fun, but in reality he has participated in this design process and benefited from many values that affect his behavior. To reach an interactive environment, the designer must study the basics of interactive design, which are: Creative thinking - studying human elements and factors - using appropriate technology.

1.8 Interactive methods and elements for the child in the urban space:

The interactive elements **Fig.** 2. aim to take advantage of everything available in order to fulfill the child's needs in the spaces and help develop, interact, and grow. Among these interactive methods are the following:[9]

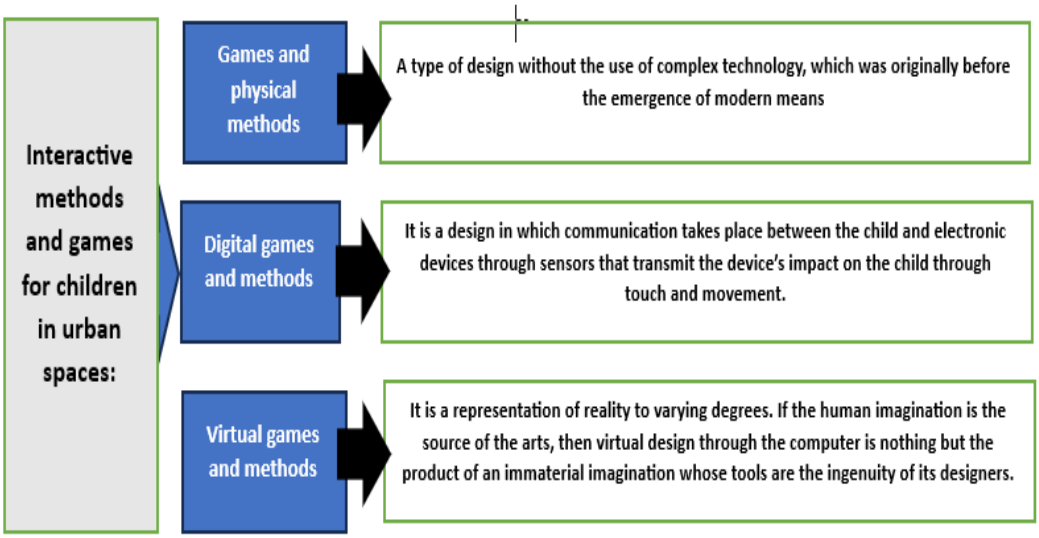


Fig.2. Interactive methods and games for children in urban spaces.

The focus will be on physical interactive tools and games to study children's skills on, as they are the most widespread elements, whether in urban spaces or at the level of nurseries and schools for children, and the simplest in terms of installation and the least in terms of manufacturing and cost.

The criteria for the physical interactive methods were chosen based on several elements:

- The availability of the majority of elements or interactive methods and the possibility of their presence in a vacuum is easier than in others.
- These methods rely on a large number of skills that help the child at this age.
- These elements can be easily manufactured and installed in a vacuum, with the possibility of moving some of them if possible. The possibility of maintaining these elements is relatively inexpensive, with the exception of assembled elements and large-sized elements These items are suitable for all categories of children, starting from kindergarten children to primary school children. The safety factor is available in a large percentage in these elements and is not harmful to the child's health and psychology

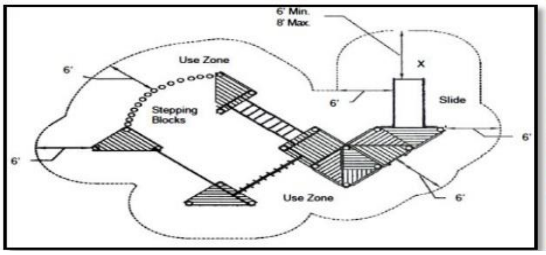
1.8.1 Interactive physical methods and games (static - animated).

It is a type of interaction in design without the use of modern technological elements, and this interaction is the main one before the appearance of these modern elements. The designer was always searching for innovation and development. Physical interaction is the mutual communication between the designed product and the interacting one [11], such that both influence the other with the aim of delivering the targeted message in a way that attracts attention and brings pleasure to the recipient without using technological elements. These methods include the following: **Table**.1.

Walls and climbers, including (coloring and writing walls - disassembly and installation walls - climbing and moving walls) - slides (straight and wavy) - swings - floors - balance devices (bridges and ropes) - integrated play devices - playing with sand.

Table 1. Interactive elements in urban spaces.

Type	Examples of methods for interactive elements within spaces		
Walls (vertical climbers)			
	Walls to color	Walls of moving shapes	Walls for disassembly and installation
			
	Vertical climbing walls	Flexible rope climbers	Fixed climbers

<table>
<tr><td rowspan="3">Interactive floors</td><td>    </td></tr>
<tr><td>Flooring pictures and colors</td></tr>
<tr><td>    </td></tr>
<tr><td></td><td>Textile flooring</td></tr>
<tr><td rowspan="2">Straight and wavy sliders</td><td>    </td></tr>
<tr><td>Straight and wavy sliders</td></tr>
<tr><td rowspan="2">Swings</td><td>    </td></tr>
<tr><td>Different shapes of swings in the spaces</td></tr>
<tr><td rowspan="2">Balance devices</td><td>    </td></tr>
<tr><td>Balance devices</td></tr>
<tr><td>Compound Integrated Play Devices</td><td> 

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	Compound Integrated Play Devices
Sand basins	  
	Sand basins

1.9 The relationship between elements, interactive methods, and the skills that the design seeks to impart to the child.

Each element of the interactive methods can be designed in several shapes, images, and materials, based on studies of the current situation of the urban space, including spatial and visual determinants, the characteristics of the child, his age and needs, and the cultural and social level of the children, taking into account the element of safety, low risk, and the presence of a supervisor to explain the required games and movements. Interactive elements that seek to achieve each skill in general can be suggested, and the designer must take from them what suits him according to what is required, **Table** 2.

Table 2. relationship between the skill and the various methods for achieving it.

Skill	Appropriate interactive methods	Models that increase the skill required
trust	Interactive elements are designed in ways that increase children's confidence in their ability to accomplish a specific task and see its positive outcome. The interactive physical design of walls can be used, such as climbing walls, with simple raw materials that are safe for children when they fall or move, so that the child does not lose confidence when trying again and feeling like he has accomplished something. To achieve confidence for the child, attention must be given to giving him safe movement, using simple and safe raw materials for him on floors, furniture, and walls, and using regular shapes that give him a sense of stability. Comfort must be provided by using design vocabulary that provides this comfort, such as colors in the design and choosing colors that suit large spaces and colors that It is suitable for small spaces and sizes, in addition to the ease of using the interactive element and the ease of understanding it among the most important design axes in achieving confidence among children.	     

Self reliance

To achieve self-reliance, interactive walls can be used with cubes, colors, dismantling and assembly, or complex physical interactive walls. Or climbing walls, mounted devices, balance devices, or swings.






To achieve the child's self-reliance, there must be interactive means that are easy for children to use, easy to access and control, and easy to understand their purpose, while providing an element of safety by using safe elements and raw materials and not using items of heavy sizes or weights or sharp materials. The child also depends on The same when taking into account the comfort of using the element, taking into account the child's scale in the dimensions of the interactive element, and taking into account the extent of children's awareness when using the interaction.

Skill	Appropriate interactive methods	Models that increase the skill required

the responsibility

To achieve responsibility for children in the spaces, the child must be given a sense of special ownership of something, so the child feels responsible for it. This can be addressed in the following ways: By assigning each child a designated area that he is responsible for organizing and controlling. This part can only be temporary while playing.

The axis of ease of use comes first in order to achieve the goal of responsibility when developing the urban environment in open spaces. By specifying a specific part in the interactive element for each child, it gives him a direct feeling of responsibility towards him, and that this area is dedicated to him. The axis of beauty and attraction for children also affects their attraction to the element, their love for it, and the inspiration. Responsibility towards him.

cooperation

Interactive methods and elements that help the child cooperate are designed on a large area of the floor or walls to enable several children to stand or finish the task together, or with several different activities or tasks so that each child accomplishes a small task on his own. - Wall for disassembly and installation - floors - climbers.




To design an interactive element in children's spaces, it is designed to achieve the goal of cooperation between children. It is necessary to take into account the space that allows children to sit around this element, and what are the beauty and attraction elements used to attract children to it. Safety elements must be available using safe, environmentally friendly and non-sharp materials, taking into account The dimensions of the child's body that is used to provide an element of comfort when using it, whether while sitting or standing, and focus on designing an element with clear productivity so that the child feels the production of what he did.

Work in groups

Physical Interaction Design:

Interactive floors: interactive walls in the form of a perpendicular, circular, or other texture. Composite interactive walls.



Designing floors in the form of annular or circular lines in which a number of children can gather in small groups, or regular geometric shapes that tend to be perceived, such as a circle or square, which helps bring children closer to each other.

Skill	Appropriate interactive methods	Models that increase the skill required

Exploration

Physical Interaction Design:

Physical design can create an environment that encourages children to explore and understand new concepts by playing or following certain steps, such as: Play in the sand to explore new things Playing in small plants to explore plant life. An interactive climbing wall to deal with movement. A white wall in the void and discovering the sunlight falling on it.




To design an interactive element for a child to achieve a stimulating, exploratory environment, the design must be thought about in order to reach something new for the child. He can experiment and explore several times to understand what the purpose of the element is and this goal can be reached. It is necessary

Use of senses	to focus on the axis of attraction for children by using an element that is interesting and different for the child to motivate him to use it and deal with it, while paying attention to the two axes of safety by using toys that are flexible, light, environmentally friendly, and small in size for children and do not give a feeling of fear and are easy to use. It takes into account the child's level of thinking and use and is also proportional to the child's size, height, and body dimensions Physical Interaction Design: Interactive walls with mazes and pathways stimulate children's visual and sensory training. Interactive floors with tracks to use the sense of sight, distinguish between shapes and colors, and motor interaction for children by jumping and moving on shapes and intellectual training in learning something new.   Urban spaces are the primary place for the development of the physical, social, emotional and cognitive development of children in early childhood. Given that these children are distinguished by a special nature, it is necessary that the specifications of the space meet their various needs in various aspects of development. The kindergarten supports the child's physical aspect, as it contributes to the development of his muscles, and also contributes to the development of many of his mental abilities by providing many activities and games. There must be interactive elements that develop all of the child's senses, including visual training that relies on colors and shapes, muscular training that relies on movement and activity, and sensory training that relies on contrasting materials.
Freedom and activity	Activity is achieved for children within the spaces by employing design in its elements and vocabulary in ways that give a sense of activity. Interactive walls that rely on perpendicular lines that encourage upward movement, or interactive floors that rely on curved and broken lines that give a sense of activity, or interactive walls that rely on different shapes to give a sense of vitality and excitement to children.  

Skill	Appropriate interactive methods	Models that increase the skill required
Freedom and activity **Challenge and creativity**	When thinking about designing an interactive element within children's spaces to achieve freedom for them, we must focus on the axis of ease of use, understanding and awareness of the element, and use design vocabulary that encourages movement, activity and ascension, such as using long or perpendicular lines on the walls in the form of climbing walls, or curved and broken lines with paths. Specific shapes on the floors. Different shapes with attractive colors can also be used in the form of interactive walls installed on the walls, or floors with a clear and specific texture, whether perpendicular, radiating or other texture. Freedom can be achieved for children by giving them the opportunity to form a shape without restrictions or interference from someone. Physical Interaction Design: Physical interactive design contributes greatly to children's creativity and innovation because the creative shape or element can be seen for a long time and the possibility of changing or modifying it easily. Examples of	 

interactive design elements include: For interactive walls with holes and leaving the children to their imagination and creativity in modifying shapes, magnetic interactive walls, or walls for drawing and writing and leaving the child to produce what he can do.

To achieve challenge and creativity within children's spaces, interactive elements can be designed that contribute to innovation among children, such as walls with holes and holes, and children can leave their imagination and creativity in forming shapes or coordinating colors. Magnetic walls with colored units, letters, or numbers can also contribute to achieving challenge and creativity for children, or leave walls. Entirely for drawing and coloring.

1.10 Suggested interactive techniques and methods for development:

The available interactive methods that can be used in developing the environment of urban spaces can be summarized by exploiting the space's parameters: walls, whether built or natural, such as trees and shrubs - floors - furnishing elements, through which a multi-use design can be provided and help in developing the environment through interactive design, as in **Table**.3.

Table3: Suggested techniques and methods for development to improve children's skills.

Interactive style	Method of influencing the elements of urban space.			Impact on the child	Check skill	Requirements
	walls	Flooring	Furniture			
Walls for coloring	It is possible to provide part of an existing wall or create an entire wall for children to write and color on			It helps the child distinguish different colors as well as release his energy.	Creativity - cooperation - dealing in groups - using the senses.	It requires an existing wall with special specifications that can be erased and written on, and colors that can be purchased.

Interactive style	Method of influencing the elements of urban space.			Impact on the child	Check skill	Requirements
	walls	Flooring	Furniture			
Walls for disassembly and installation	A wall design that includes a group of small elements that can be removed and installed, such as small pipes			Learn new relationships and connect shapes to each other	It helps in achieving most goals	It requires several materials depending on the design

Composite walls	The wall is designed in a variety of different interactive shapes			It affects the child as a result of what was designed. It is possible to understand new concepts, or be trained for a specific job.	self-reliance, the responsibility, Use of senses Exploratory environment Challenge and creativity	It requires several materials depending on the design
Climbing walls	Design and treatment of an existing wall or design of a wall with a set of nets or pipes for climbing			It helps the child move, be active, and provide muscle training for the child	trust self-reliance Exploratory environment Movement and activity - challenge and creativity	It requires a certain height, a large area, and some materials that help the design
Textile flooring		Floors are designed with a texture that serves the required function		It helps the child to think with movement and understand its purpose	Working in groups, freedom and activity i Use of senses	It needs colors to paint with, or adhesive strips, or tile units with a specific texture
Floors with tracks		You need large spaces, so corridors can be used between the spaces		It helps the child to move, be free and active	Exploratory environment Movement and activity Use of senses	He needs colors to draw with, or adhesive tapes

Interactive style	Method of influencing the elements of urban space.			Impact on the child	Check skill	Requirements
	walls	Flooring	Furniture			
Straight skis			It is considered a key element in the design of any urban space	It helps the child to move, have freedom, be active, and become self-reliant	Movement and activity Exploration Use of senses Freedom	These items are often purchased ready-made and provided with a suitable place according to their design

Wavy slides		It is considered a key element in the design of any urban space	It helps the child to move, have freedom, be active, and become self-reliant	Movement and activity Exploration Use of senses Freedom	These items are often purchased ready-made and provided with a suitable place according to their design
Balance devices		They can be used in space design with a variety of ropes and chains	It helps the child to move, have freedom, be active, and become self-reliant	Movement and activity Exploration Use of senses Freedom	These items are often purchased ready-made and provided with a suitable place according to their design
Integrated gaming devices		It is considered a key element in the design of any urban space	It helps the child to move, have freedom, be active, and become self-reliant	Movement and activity Exploration Use of senses Freedom	These items are often purchased ready-made and provided with a suitable place according to their design

1-11- The generalizability of physical interactive methods based on the methodology used in different.

regions. Based on the various methodologies used in the research and on the methods and models presented, all physical interactive methods (floors - walls - furnishing elements) can be included and applied in all urban areas and spaces for children, provided that the appropriate elements are available for them, as various elements and various games can be applied that help develop their skills. The child improves his development and interaction in these spaces.

Physical interactive elements can also be integrated in a way that is also appropriate for children with special needs, and virtual and digital elements can also be included for the child, but in a different manner, as these methods allow for increasing the child's skills, but they require a special method and designated places to practice such activities.

1.12 Results and recommendations:

Results:

The research results can be summarized in the following points:

- The urban designer has a major role in adapting the space to design interactive means and elements within the urban spaces that contribute to achieving its basic goals.
- Interactivity is a means of communication that links the user to the space or element through the user's perception, clarity and ease of use and allowing reactions from the user, whether kinetic, auditory, or visual, without the intervention of any intermediary, and takes place in a real or virtual environment.

- The study concluded that the appropriate techniques for developing kindergarten spaces are divided into physical interactive design methods - digital interactive design methods - virtual interactive design methods, and the focus was on physical design.
- The study concluded with the relationship between the interactive elements and the desired goals of open or urban spaces, namely: Achieving the different goals and skills varies according to the variety of interactive methods between each skill and another, as shown.
- The available interactive methods that can be used in developing urban spaces are summarized by exploiting space parameters such as walls - floors - ceilings - furnishing elements, through which it is possible to design a multi-use urban space and help in preparing and coordinating the space through interactive methods and design.

Recommendations:

Based on the studies conducted in this research paper, a set of recommendations can be reached, which are:

- When designing an urban space or when dealing with children in general or any spaces for children, the designer must take into account the needs and characteristics of the child at this age to determine what goals and skills are required to be achieved from this space.
- The designer must collect sufficient data about the environment in which it is located, the type of children and their age stage, follow up on what is new in interactive systems, and study what is appropriate for each age group of children, and what is appropriate for each environment.
- Researchers should conduct complementary studies on the impact of using digital and virtual interactive design and whether it can be applied in different environments in Egypt and its role in achieving different skills for the child.

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