Interactive and its impact on developing the child's senses in early childhood development centers

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Research Summary:

Science and technology are now the biggest drive for humanity on all aspects of life, and creativity in the design process has become not only dependent on proportions and functional aesthetics, but also on the use of all available tools and the selection of appropriate technological technologies.

One of the spaces most affected by the use of technology is "children's spaces", especially since the child is one of the most prominent users of modern technologies in our time compared to the more advanced generations.

Interactivity represents the transition from the traditional idea of design as an element to the idea of event design in which the values given to behavior, dynamic action, and surrounding space become more important. The integration between the internal and information space arises in moving from the physical dimension of the space to a set of applications that depend on the user's cognitive processes and deal with information, communication and interaction. Therefore, the integration between the limits of the internal space and the applications of information technology represents a new addition to the definition of design in this era in its broader field

Interaction means the contact between the user and the computer, whether direct or indirect, and direct interaction includes control and dialogue with comments or actions throughout the work, either indirect interaction may include only a background or some sensory processing, but the important thing is the user's interaction with the tool through The computer to accomplish a specific task or processing" .

Reactive space structure:

To understand the interactivity dimension in the interior design, it is necessary to put the assumption that it is possible to reach a space in which the physical dimensions of the space and the electronic dimensions are integrated without canceling one of the other. And we can call this new model of the internal space the interactive model, where the interaction is mutual between the dimensions of the space structure, which is divided into:

A- The physical structure of a vacuum:

It includes walls, ceilings, floors, and furniture units for each activity separately.

B- The electronic structure of the vacuum: it is divided into

• **Physical equipment**: These are wires, equipment and communication units responsible for transmitting information.

• **Electronic programs**: It is a set of laws and programs that carry out the process of interaction and the process of movement and receiving orders.

Therefore, the basic structure of the interactive space consists of both the physical and electronic structure of the space, each with its contents, taking into account the effects that each of them have on the other, which leads to the development of the performance of the interactive structure of the used space. It can be said that the user's activities have become distributed between these two spaces. Taking advantage of that provided by each vacuum of capabilities and components that suit every activity.

Definition of interactive education:

It is a method used in education and training that depends on the interaction between children and the teacher, as well as on the interaction between children and each other.

The importance of technology in designing spaces for children:

•Sensory Perception: where illustrations and shapes play an important role in clarifying the written words of the child. And closer to the content to be communicated to him.

• **Understanding:** Where educational technology means help the child to distinguish between objects and distinctions, such as distinguishing colors.

• **Skills:** They are important in the child's learning of new skills, such as social skills and pronunciation, or learning a mathematical skill, or the skill of drawing and using color.

Diversity of experiences: Through the use of educational aids, it is possible to diversify the experiences provided to the child in the classroom, giving him the opportunity to watch, listen, practice and meditate. Thus, all the child's senses participate in the learning processes, which leads to the consolidation of learning.

• Teaching aids help in diversifying the teaching methods.

• **Shortening the time of instruction**: by using some educational means, the time required for learning can be reduced

It encourages learning and strengthens the survival of information due to the active participation of children.

They begin with more communication with those around them, for example talking to their peers or showing teachers and parents what they have done.

Features and characteristics of interactive space:

• **Forming new spatial relationships:** the formation of new spatial relationships does not depend on the spatial dimensions as a determinant of easy access to the goal and instead has become dependent on communication technology and the electronic connectivity elements used that determine the speed of communication, that is, access to information that changes the formative dimensions or influences within The void is not affected by the fact that it is stored in an information center near the user, in the same space, or far from him in another place.

• **Flexibility:** It is also characterized by a high degree of flexibility, as it is easy to modify its components and change its system without being bound by physical parameters.

• **Development:** This vacuum is characterized by the accelerating development mechanisms that characterize information and communication technology.

• **Personal Appropriateness:** It is characterized by the appropriateness of the child's personality traits, where the view of the electronic content of this space can be changed to suit the characteristics of each child without affecting the rest of the children or the efficiency and effectiveness of the activity.

• **The transformation from physical dimensions to electronic:** the transformation of the internal space into an information group instead of walls, ceilings and floors. The electronic space also provided different types of environments for the child, through which he can interact with each other and with the surrounding environment through new values of temporal and spatial relationships.

Technical studies of interacting surfaces that make up children's spaces.

We will deal with the study of the technology of interacting surfaces that make up children's spaces, and it is worth noting that these interactive surfaces are used in one determinant within the space designated for the child, such as (floors, walls, or furniture units ... etc) only, and the building is not completely interactive so as not to distract the child. This is because the interactive surface does an act of attracting the child's attention, which raises the child's astonishment and his love of exploring things, but with more than one interactive determinant, the child's cognitive abilities are dispersed to keep up with the specified and interact with it.

A- Smart Interactive Floor

The interactive floor combines the perception of body movement and the effect of this movement on surfaces and the floor. The interactive floor transforms the spaces of the floor into an enjoyable experience as a result of the changing shape of the floor according to the movement of the child passing over it.

• **Interactive floor through contact:**
• **Interactive floor by projection method:**
• **Interactive floor with sensor cells**

B- Interactive walls

▪ **Natural trail**
• **Reactive paint**

C- Interactive Furniture:

INTERACTIVE LEAVES CHAIR

D- Interactive educational units

Among the models of interactive surfaces are the interactive desk and the interactive writing boards, which consist of a Prespex flatbed and a special projector.

- **Interactive Whiteboard**

A white sensitive electronic display (panel) that is dealt with using the sense of touch (with a finger or digital ink pens) and is connected to a computer where it displays and interacts with the various computer applications stored on the computer, either directly or from a distance.

- **The interactive desk**

The table system was established with adding elements of the sensor wooden table, there are air network A Mesh- Like Antenna is made of copper wire and are themed on the table. The cell and the number of cells are 10x10 and the grid covers a distance of 80x90 cm.

- **Pictionaire Interactive Table with Digital Cameras:**

Human touch table using gestures.

- **Displax Crayon Interactive Table:**

Displax has launched an interactive desk to be used by children and it consists of a hard disk surface and an interactive surface, and it comes with a set of applications designed to help children learn and allows your children to draw an unlimited amount of pictures and comes pre-programmed with lessons.

- **Mesa Classroom Office:**

An office designed by Phelan Mille, works via a touch screen and includes grammar checking, spell checking, a dictionary of transcripts, and a math section, including the ability to "free write" to improve handwriting, and it is connected to the Internet, and it interacts even with the real paper, It can be wiped by the child's hand, and it is a desk that accommodates two children.

E- The Interactive Baby Bed, Sleep IQ:

The interactive bed for children has several advantages as the ability to change the head position from the sleeping position to the reading position. It is able to adjust the bed pressure according to the child's growth, and parents can follow the child's activities during the night periods by storing information that is sent to the parents' phone the number of times the child woke up at night as well as monitoring the extent of rest that the children may get during the night.

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