

## **Playing and Entertainment Design for children with disabilities (7-11 years old)**

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Received 08.06.2017; Accepted 08.09. 2017

### **Abstract**

The present research is a descriptive study, which initially began by providing the definitions of the vocabulary and its types and games and its effects on the child. They have addressed the moral abnormalities of children with disabilities (aggression, withdrawal, and lack of self-confidence), with regard to the theories on the effects of the game on the social skills of children, then the interests of children in different age groups are examined and successful domestic and foreign examples of toys produced for the disabled are considered. And with regard to your respectful opinion, and an interview with the expert on the subject, Playboard approaches are provided. In the games presented, the theme intended by the designer is how to connect the child to the game and how to train the type of the game. In the three games presented, the emotional relationship between the child and the toy has been considered as well as creative, motivational, and collaborative learning.

**Keywords:** play and entertainment; disability; child; physical impairment and disability; self-confidence; aggression.

### **Introduction**

Toys are one of the important factors influencing the personality of children and adolescents. They can have a positive or negative effect on behavior, self-confidence, education, culture, mental and emotional development, social ideals and even their diet. Usually, toys are a maquette of people, tools, and devices in everyday life that the child plays with their shapes and learn the usage of them. There are always policies in designing of the toys and also their numbers in markets which have been used to form social goals and needs and cover various government programs [1].

What is important here is the effect of toys on social personality formation and education for people with disabilities, as well as other people in the society and their familiarity with this subject, because the children with the help of the dolls with disabilities will get ready to have a disabled friend at a young age. In the case of a person with a disability, the disabled child who uses certain means can also be said, having a puppet home and a maquette similar to their own status and

equipment, they can learn how to manage and use them while playing, and they are familiar with the limitations and the ways of resolving the problems, and they are more comfortable accepting

them [2], the purpose of using such devices is to assist the person with disability in restoring and increasing mental and motor abilities. In the design of playing equipment for the physically handicapped, the following should be considered:

- Ease of use
- The ability of the person to fit the equipment
- A person with a disability does not suffer harm because the mentally handicapped sometimes throw objects or put in their mouths, so the lack of sharp edges is a design feature for them.

Applying perceptual ergonomics, especially for mentally ill people with disabilities, For example, in the design of devices whose purpose is to use the expression of a large and small concept, it should be the matching between similar or non-identical organisms and to distinguish them from each other. Therefore, in the design of game equipment, we must care to create passion and motivation [3]

### **Method**

Interaction design can be understood in simple terms. Often when we talk about interactive design, products are usually software products, such as programs or websites, but in the process of this research, we are dealing with entertainment or toys that necessarily have a close relationship with their audience. This connection can be physically touchable or intuitive or even emotional. And the goal of the interactive design is to create products that enable the user to achieve their goals best. Interactions between a user and a product often include elements such as aesthetics, motion, sound, space, and more. Of course, each of these elements can include more specialized fields, such as sound design for making sounds used in the user interactions.

There is a greater need for interaction between the product and the target group for low power users who are the target group of this research, due to the wide variety of existing deprivations, these interactions can be used(mentally or really) to create a sensory relationship with the product or to design a sound to encourage the user. In terms of interactive design, we have to set out the topics that will have the closest result in direct interaction with the user.

Topics like

- Who uses the product?
- What are the conditions associated with the product?
- What does the product help the user?
- How can the user interact with the product (mouse, pen, playbill, or finger)?
- Does the user know the appearance of the toy like the color and shape, size and graphics of the product and how it functions?

Questions like this help us strategically think about any element used in the product.

In the design of a toy for the disabled in the interactive approach, the following questions arise:

- Type of user disability?
- Abilities and capabilities?
- User position in product use?

- User-related issues with the product?
- Does the product meet or improve its needs?
- Has the type of relationship with the product like? Does it need? Does it help?
- Type of disability, an inability on the legs:

One Leg

Both

Legs and one hand

Inability to have legs and sensory disabilities (low vision, hearing impairment in one member or both)

### **Description**

- Available abilities and capabilities: we design the toys for the disabled with respect to existing abilities. For strengthening and enhancing the abilities that exist, it serves as the primary objective to bold the potential abilities that can be either mental or physical as a secondary objective.
- The type of user placement in relation to the product is one of the most important points in the design of the interaction, whether a user is seated should use the product, either standing or sleeping, this is one of the most important points in designing for people with disabilities. What we can do is to look smartly at the user's placement and the type of use, and to use the deficiencies to improve the features of the user.
- The accuracy of the user's mental relationship with the product and the examination of the deficiencies that are expected by the user can enhance the level of interaction with the product for the user and give the user a sense of satisfaction.
- Considering how the user's needs are reviewed and analyzed in the design of the product, or can help to upgrade a person's disability.
- All the issues raised in this analysis were about the type of communication and interaction between the user and the product, but in this last point, I decided to draw attention to some kind of communication with the user, which I refer to as the user definition of the product. Perhaps this definition is completely unprofessional or it's the same as the user's feeling, but in fact it defines when the user interacts with the product, for example, he says that the toaster is like a tank; this definition includes feeling, experience, and the user's perception in interacting with the product. The point that has a great importance in designing for the low power is that when we ask the user how exactly this product (toy) is? And he says, I love it, this for the designer indicates that the product is affecting the user's emotional need, and when he says that the product has been created for me or I cannot without it, it demonstrates the satisfaction of the user's needs. These definitions can help to determine how and how the user communicates with the product and this is very significant for the designer.

### **Discussion**

The output of this test has three tables. The most important table is the last one. As mentioned, the last column of the third table is the Asymp column. Sig (2-sided) if less than 5%, H0 is rejected. You see, this has happened, and this amount has come down to three computational methods. Therefore, according to Chi-square test, there can be claimed that there is a meaningful relationship between the interest in the game and the behavior improvement. In other words, these two variables have " correlation" with each other.

In addition, the second table shows the frequencies of the two variables in opposition to each other, as well as the expected frequencies (= mean frequencies). For example, the number of people whose children have shown great interest in the game, and at the same time, they have believed that this interest has made a tangible change in the behavior of the child, were 13 people.

So, citing the same way:

Hypothesis 2: There is a clear relationship between playing and improving the level of participation in these children.

H0 are two variables of interest in playing and the effect of the game on improving the level of independent participation

H1 are not two-variable interest in playing and the impact of the game on improving the level of independent participation

SPSS Output:

**Case Processing Summary**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
<b>The amount of interest in the game * The level of participation of the child after the game</b>	45	100.0%	0	0.0%	45	100.0%

**The amount of interest in the game \* The level of participation of the child after the game**

		Child Participation Level After the Game		Total	
		Increases	Does not increase		
The amount of Interest in the game	high	Count	8	9	17
		Expected Count	9.0	7.0	17.0
	low	Count	13	7	20
		Expected Count	11.0	8.0	20.0
	Not interested at all	Count	5	3	8
		Expected Count	4.0	3.0	8.0
Total		Count	26	19	45
		Expected Count	26.0	19.0	45.0

### Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.000 <sup>a</sup>	2	.000
Likelihood Ratio	1.000	2	.000
Linear-by-Linear Association	.000	1	.000
N of Valid Cases	45		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 3.38.

Analysis: Aysmp value. Sig (2-sided) of the Chi-square test is almost zero. Therefore, there is a significant relationship and sever correlation between the child's interest in playing and the effect of the game on improving the level of child participation.

Hypothesis 3: rehabilitation children who make self-made toys make less aggressive behaviors. In other words, the game with its self-made toys has a positive impact on the improvement of the child behavior.

H0: The game has a positive impact on child's behavior with self-made toys

H1: The game does not have a positive impact on children's behaviors with their self-made toys

### Case Processing Summary

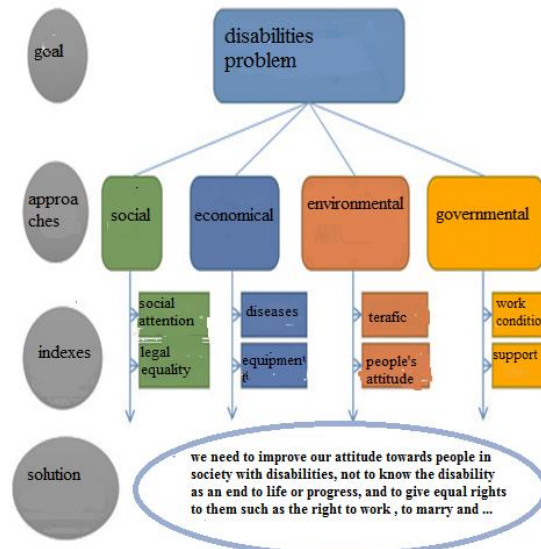
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Favorite toy type * The effect of the game on behavioral abnormalities (aggression-withdrawal)	45	100.0%	0	0.0%	45	100.0%

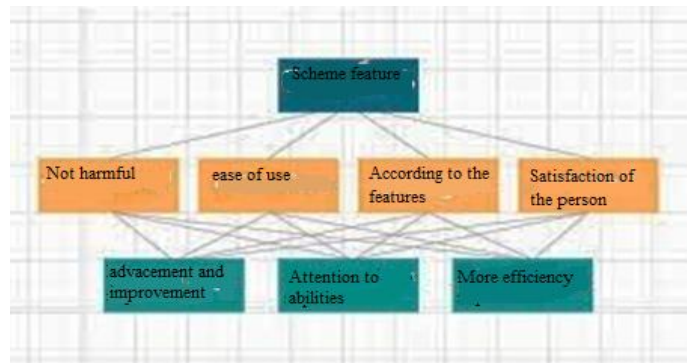
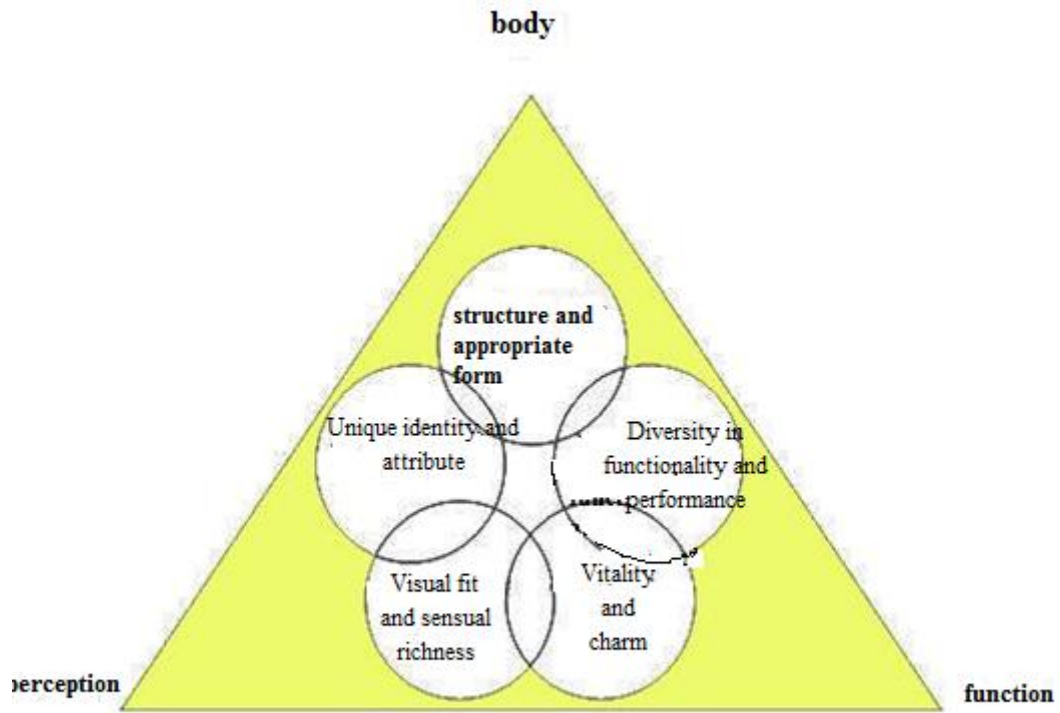
**(Favorite toy type \* The effect of the game on behavioral abnormalities (aggression-withdrawal**

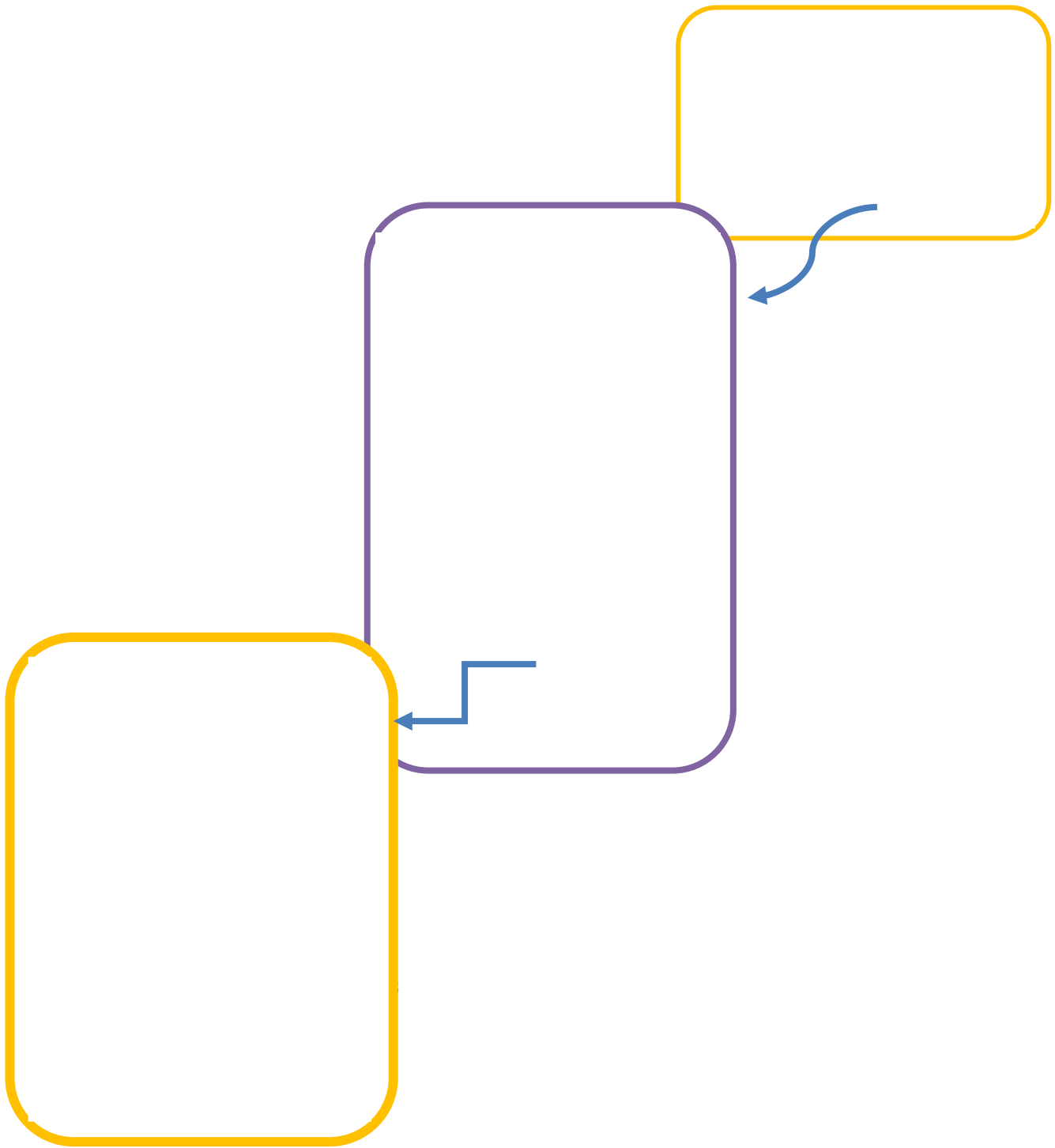
			The effect of the game on behavioral abnormalities (aggression-withdrawal		Total
			high	medium	
Favorite toy type	Toys of the lower age category	Count	15	4	19
		Expected Count	13.1	5.0	19.0
	self-made toy such as a matchbox instead of a car	Count	14	9	23
		Expected Count	15.0	7.0	23.0
	Home appliances and so on	Count	2	1	3
		Expected Count	2.1	.0	3.0
Total		Count	31	14	45
		Expected Count	31.0	14.0	45.0

**Diagram analysis**

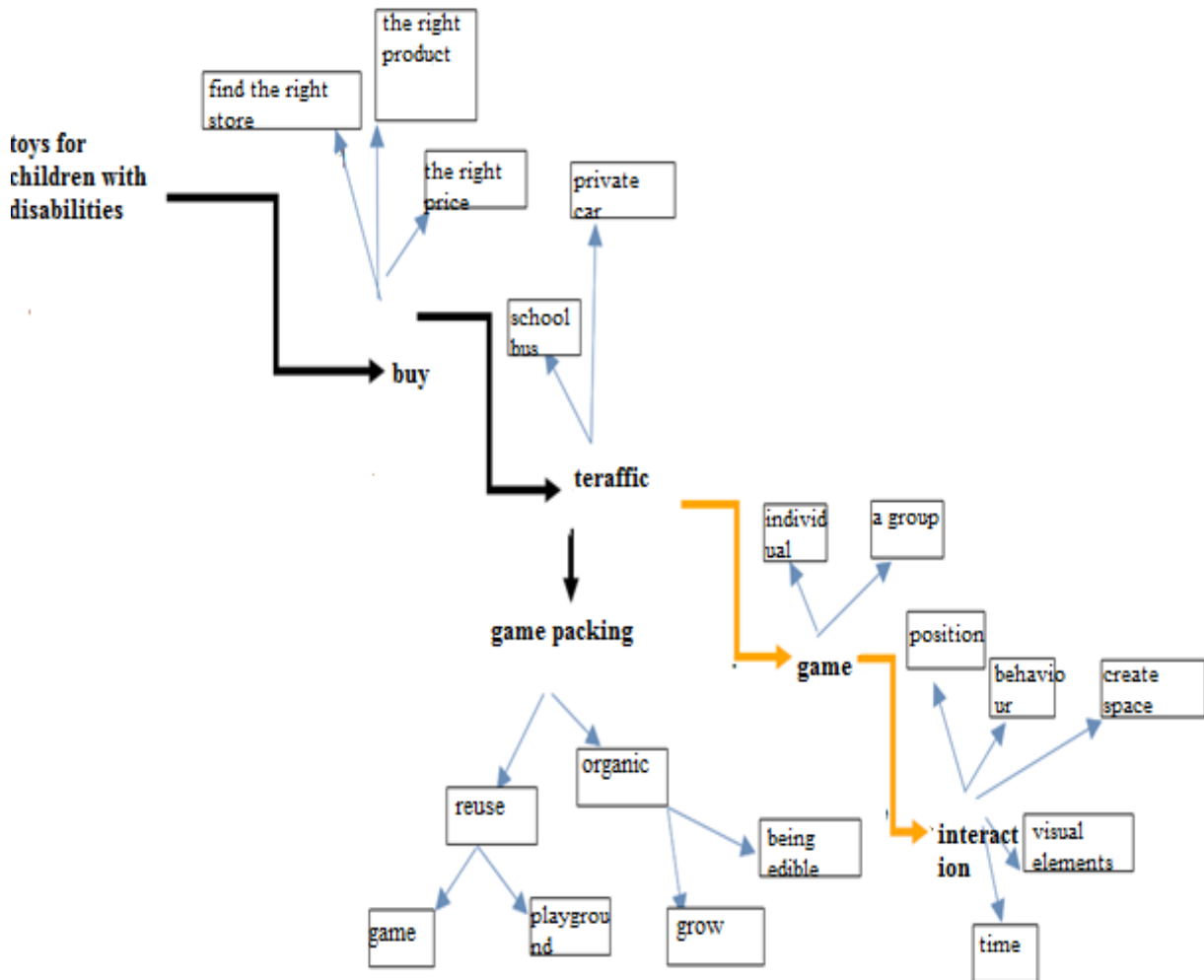
**Analysis of the findings:**











### **Emotional analysis**

Children with disabilities have always the feelings of fear and independence remains constant, because of frequent falling, and these feelings grow along with them. If you do not have an alternative to eliminating these negative emotions in a child, it is treated seriously in adolescence, and sometimes it's never been treated and leads to individual isolation. These people are often educated and specialized, in addition to the effects that it has on individuals, it can be harmful to society.

These people feel weakness in their physics, so they think in their minds that it is unfair, because of the protest of this injustice, they become aggressive. More aggression occurs at an early age that a person has not yet been able to accept changes in comparison with other people, and their complications are fixed in adulthood. Due to deficiencies, the person is constantly feeling dependent and often needs to be accompanied.

## **Technology analysis**

Definition: Providing a product of game and entertainment for low-mobility children improves behavioral problems and motivates them to play.

Product Meaning: The product or design presented should be such that it is attractive to the child and can make the stretching play in a child with a disability. It should not emphasize his disability and can motivate the child, the presented item cannot be a charming doll or stretching tricks in the game for children with special conditions or products or a space for presentation, and these charms can be helpful educators.

Identification with user attributes

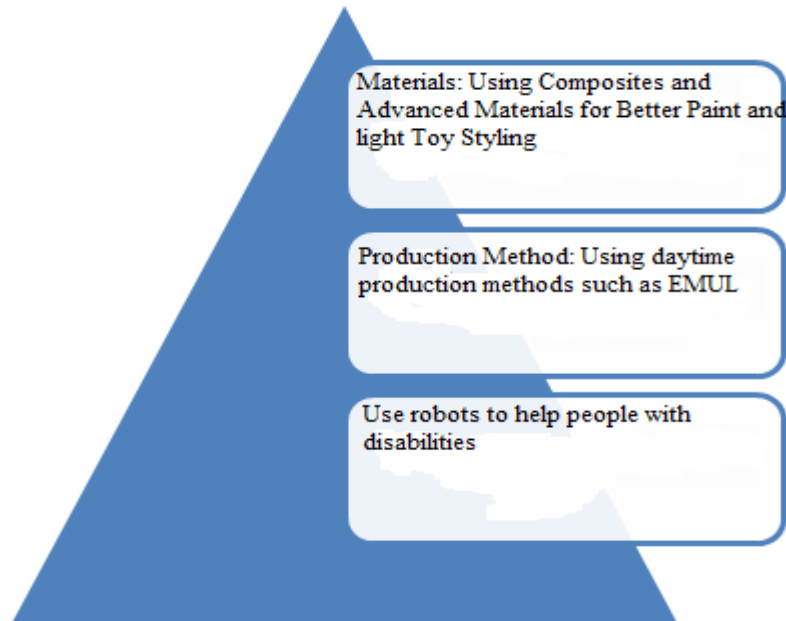
Need to play games with toys that match the user's features

Need to create interaction between the user and the product

The interaction between the user and the product is one of the key points in designing for the disabled

Need to accompany

The user with special conditions feels constantly that there is a need for him. In the design of the toy, we try to consider the user's positions and reduce the dependence.



#### Hobby structure

Indices obtained from analyses:

- Pay attention to the ease of use
- User interaction
- Attractive and fun

#### Conclusion:

In this study, we have tried to provide a plan for covering the needs of the children, namely children with disabilities, in order to cater for the needs of the game and entertainment of these children. The presentations have been done with a library study of needs, and a questionnaire and a close relationship with the families and educators of the children and their relationship with one another with the parents and educators and the field studies conducted by attending the children's schools and games. It's done with children and exploring how to deal with playing equipment for children such as outdoor play balls or playing with gadgets and figurines in the interior that are more effective in order to easily reach the playing field for these children.

The suggestion of hub games at first and the lack of access to the child, or the difficulty of access and speed of play can dissuade the child from playing, and his interest in playing or even imagining the achievement of a happy and successful space can be eliminated. Therefore, for these children, at first, games of friendship (space of home) like dolls with the character of friend and figures are considered to be interested in playing and understanding their capabilities. In an economic look, according to the market reviews and the study of the status of the 10 largest toy companies in the

world, it can be seen that the toys are not a means of entertaining as past, but can also be a means of teaching change and even economic policies.

Despite the deterioration of the global economic situation, toys continue to be a major commodity for children worldwide, which is more important in developed countries. In addition, due to the decline in birth rates in recent years, the turnover of the toy industry has not diminished due to the rising prices and more attention to children's needs. Especially as Asia is the continent with the highest population and high birth rates, and consequently the large population of children has a massive market for toys, and it is believed that the Asian and Asian markets will end in Europe and North America.

In addition, out of every 10 children, a child with a type of low birth is born, and this can, in addition to the relative scrupulousness and stretch of the game-play industry for children, can bring significant technological and economic advancements. Achieving this widespread market cannot be achieved except by the officials of the state by focusing on the needs of the industry and the low-cost advertisements for domestic products, as well as the reduction of the facilities and unimportant imports of non-quality Chinese products.

## **Conclusion**

The present paper is a descriptive study initially developed by defining the disabilities and its types and games and its effects on the child, according to the theories about the effects of playing on the social skills of children to the moral abnormalities of children with disabilities (aggression, withdrawal and lack of self-confidence). Then the interest of children in different age groups is examined and successful domestic and foreign examples of toys produced for the disabled are considered. According to the expert's comments and interviews with the author of the game, playful games have been presented with a variety of ways. In the games presented, the theme intended by the designer is how to connect the child to the game and the type of training in it in three presented games, the emotional relationship between the child and the toy is considered, as well as creative, motivational, and participatory learning.

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