

Research on Design of Educational Toys for Children under the Perspective of Chinese Characters' Culture

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Abstract—Based on the investigation of Chinese market of educational toys for children and comprehensive analysis on its structure, this paper aims at improving toys' structure, shape and function in the end. At the same time, it is also an incentive to combine Chinese culture and function with the design of toys and change their structures to make educational function better perform.

Keywords—China; Chinese character; educational toys for children; entertainment

I. INTRODUCTION

With the development of global economy, living standard has been increased, so parents are focusing on the development of children's intelligence. Therefore, it has been a trend to make the educational toys be intelligence and better play its function. And it is popular to have intelligent factors in games. In this case, there is potential market for the development of educational toys.

II. PRESENT DEVELOPING SITUATION OF CHINESE EDUCATIONAL TOYS FOR CHILDREN

“Educational toy for children, we can see from its name that it is a kind of toy which can help develop children's intelligence.”¹ As the concentration on children is becoming more and more, laws, regulations and products related to children are becoming strict. Materials of products should not only be safe, but also qualified to children's taste.

There are 100,000,000 pre-school children in China by statistics, so market of children's toys is of great potential. As is put in investigation: “Per capita consumption on toys in the US and Europe are \$340 and \$144 respectively, while that in Asia is only \$13.”² With 30 years' development, China has been one of the fastest developing luxury fashion market in the world. If its consumption on toys can catch up with that of the US and Europe, Chinese toy market can be well-developed.

A. Analysis on the Characteristics of Development of Chinese Educational Toys for Pre-School Children

At present, there are varieties of toys in the market of educational toys for pre-school children, such as Elbow-Board, Puzzle, Building Block, Tower Set, Rubik's Cube, Board Game, Letter Card, Reading Machine and some other technical tools. Materials of these toys include wood, plastic, paper and

so on. Main functions of these toys are educational function and entertainment function. What's more, educational function is important to pre-school children for their study. Entertainment function can help find and develop their interests. Toys like Painting Board are favored by most pre-school children. Besides, toys like Puzzle, Rubik's Cube and Tangram can help the development of children's intelligence. So educational toys can not only help the increase of their knowledge, but also development of their thinking ability.

III. RESEARCH AND ANALYSIS ON THE COMBINATION OF CHINESE CHARACTERS' CULTURE AND EDUCATIONAL TOYS FOR CHILDREN

A. Physiological and Mental Characteristics of Pre-School Children

“Nervous system, organs and respiratory and digestive system of children are different from those of adults in physiology.”³ Nervous system of pre-school children is sensitive. There is strong reaction for irritant outside. Their skin can be easily heart. Lacking of natural antibody, they are also easily heart by hazardous substance. What's more, their bones are growing, so it's better to develop their right sitting and standing position, instead of suffering from undergrown sense organ, spinal curvature and skeleton deformity.

It is important to develop their operational capacity during pre-school period. As it is a vital way to increase their intelligence by cultivating their observation ability, focusing ability, visual and pattern cognition ability and hand-eye coordinate ability. “Because they need to sit down when playing these games, they can be patient and concentrative in the end.”⁴ At the same time, when playing Puzzle, they need to consider the position of each board, so their analytical skills and visual imagination ability can be improved. Matching of each character can help improve their cognitive ability and ability to absorb information. They will know more characters with the increase of their age. What's more, with the help of those toys, characteristics like curiosity, vigor of mind and imitation are also shared by pre-school children.

B. Application of Pixelate of Chinese Characters in Educational Toys for Children

“As a symbol to record language, Chinese characters are of great importance in delivering information.”⁵ The development

of Chinese characters including Oracle, inscriptions on ancient bronze objects, Official Script, Song typeface and the current Chinese characters. In this case, Chinese characters have patterns, visual marking feature and help explain the art of composition as well.

“Pixel is the smallest factor of a picture.”⁶ Pixilate means an icon style picture with many clear pixel points is formed. Square shape of Chinese character is like pixel in pictures. Characters vary from each other because of the difference in the structure and number of strokes, which is distinctive.

There are distinctive advantages for Chinese characters because of its square shape and different structures which can be easily accepted by pre-school children. Different patterns and characters can be formed with pixilate structure and the combination with educational toys. It can help the children with the development of their analyzing, comparing and structure cognitive ability.

C. Comprehensive Features of the Design on Chinese Educational Toys for Pre-school Children

According to comprehensive analysis, we have put forward those should be careful when playing these toys. Meanwhile, we have also stressed on diversifying pixilate Chinese characters. We have laid out the design theory - entertainment through learning characters, happiness by improving intelligence. Playing toys is a kind of entertainment, at the same time, they can know new characters.

Toys are always along with children. Lu Hsun puts out: “Games are the works of children, and toys are angels to them.” There are many kinds of educational toys in the current market, including Acousto-Optical learning Machine, Building Block toys, Bricolage toys, and remote control toys, Puzzle, Rubik’s Cube and DIYs. Among these toys, Puzzle is the most popular, and its uncertainty is favored by most players. What they are dealing with is not just a picture, but a story. Children also need to put every part on its position, which is good to improve their intelligence.

Production of educational toys is based on simple geometric figures, such as circle, square and triangle which can be easily recognized by children. Toys are made up of two kinds of materials. First, natural materials which can help children know the beauty of nature and make toys interesting as well. Second, plastic material which cost little, is easily to be manufactured and is favored by the majority. Package of educational toys is striking with bright colors. To make it easier for children to handle and play, design of those toys is children-oriented.

IV. DESIGN TABLE OF EDUCATIONAL TOYS FOR CHILDREN BASED ON THE COMBINATION WITH CHINESE CHARACTERS’ CULTURE

A. Design Features of Table of Educational Toys for Children

Children’s intelligence can be developed during playing these toys. There are always tasks for them, in order to finish those tasks their efforts and applications of clues are necessary.

Toys like Puzzle, Building Blocks, Rubik’s Cube and chess can help enrich their knowledge and develop their thinking ability. Their analyzing and cognitive ability can be improved by Building Blocks. For example, they can build blocks in the same shape with their house. So they will become innovative and imaginative in the end. There are main function and secondary function of these toys.

Entertainment function which means to find and cultivate their art talent and interest can contribute a lot to quality-oriented education. Toys like trumpet and electronic keyboard which are beautiful and funny are favored by children. Their sense of rhythm can be improved by playing these kinds of toys. Besides, when playing toys like painting board and chess, their interest and talent can be known, which is helpful for their future development.

Main function: Main function of those designs is to help them improve their knowledge. From the age 2 to 6, information children accepted is like picture instead of structure, which we call image thinking. For example, when we show Chinese character Yang to them, we need to show them the picture of a sheep at the same time to help them remember this character, which is similar to pictograph in ancient China. The age from 0 to 8 is a main period for language study. The theory “Entertainment through learning characters, happiness by improving intelligence” can contribute to their recognition on characters. Though they cannot know many characters at the beginning, it doesn’t matter. Along with their study, more characters can be learned. During their playing, they can become more imaginative and grow up in a free and happy way.

Secondary function: Those kinds of tables have many functions. Table top can be turned over by 180o (see “Fig. 1”), in this case, flat table top can be used (see “Fig. 2”). After playing they can use this table to do other things like having lunch, which help perform their functions as well.

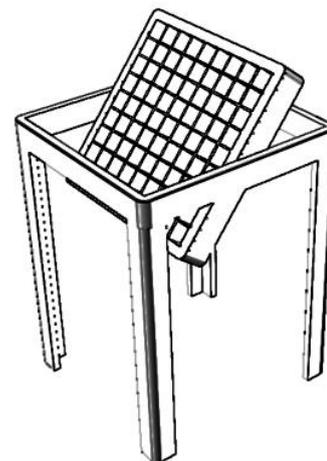


Fig. 1. Turning over of table flat model

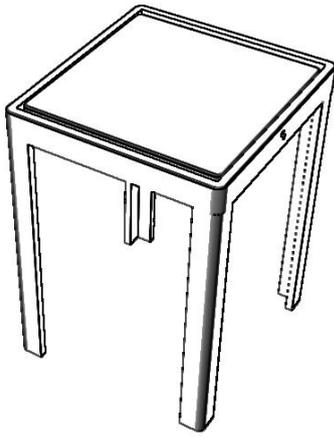


Fig. 2. After being Turned over



Fig. 3. Vertical Table



Fig. 4. Word Puzzle

B. Design Form of Table of Educational Toys for Children and Its Feature

Geometric figures have been used in the design (see “Fig. 3”). With their simple style, those toys are easily accepted by children. For instance, square and rectangular have been applied in the design, which can meet the need of children (see Fig.4). Children can be easily attracted by their fine decoration.

The application of square can help the development of children’s logistic thinking ability; height of tables is suitable for children. Length and height should be match with each other, only in this way, can they be attractive. Their skin can be easily hurt, so design of these toys should avoid small size and being sharp. These kinds of toys can help meet children’s cognitive need. With their multi-functional design, these toys can also contribute to improving their knowledge and skills, developing their interests and thinking and communicative ability and making them more curious about the world.

V. CONCLUSION

The theme of designing these toys will be the integration of Chinese culture. All the design should be based on the healthy growing up of children. Only by meeting the need of children and making children’s health as their priority, can they attract parents to buy these products. With the development of 30 consecutive years, Chinese economy has become one of the fastest growing markets with great potential in the world. Making toys with educational function has been a trend. What’s more, educational toys industry will be well-developed in the near future.

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