

Sex Education Picture Book Design Based on Children's Cognitive Psychology — the Case of Preschool Children

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ABSTRACT

In the current society, the lack of sex education for children leads to frequent problems of various kinds. In order to grow up physically and mentally healthy for children, it is necessary to teach children correct and appropriate knowledge about sex in a reasonable way, especially for preschool children aged 3-6 years old who are first aware of gender. Based on the cognitive psychological characteristics and sexual development characteristics of preschool children, this study analyzes their sex education needs, develops a sex education picture book design strategy that conforms to the characteristics of preschool children, improves the attention of all sectors of society to sex education for preschool children, and enhances their own sense of protection.

Keywords: *Preschool children, Sex education, Cognitive psychology, Picture book design.*

1. INTRODUCTION

In the era of rapid economic and cultural development, sex education in China is still in a very slow stage of development. Most parents in China are always "scared" of talking about sex and are used to covering up the issue of sex education for children. All kinds of problems caused by the lack of sex education for children frequently appear in the public's vision and have attracted wide attention from all walks of life. In the development of children, sexuality education should be provided to children in accordance with their age and developmental characteristics, so as to guide them to form correct sexual concepts and enhance their awareness and ability to protect themselves.

At the age of 3-6 years old, children are called preschool children. During this period, children have the ignorant sexual consciousness and will unconsciously play with their sexual organs, which is the critical period for sex education. As picture books are mainly illustrated with text, they are very attractive to children in terms of shape, colour, layout and composition, so most parents choose to educate their children about sex with the use of picture books. However, there is a wide range of sex education picture books for children available

on the market, with a lack of research on the cognitive and psychological characteristics of preschool children in terms of content and format, making it difficult to implement sex education for preschool children properly. In order to grow physically and mentally for children, the content and presentation of picture books should be based on the cognitive and psychological characteristics of preschool children, so that sex education can be carried out smoothly.

2. ANALYSIS ON PRESCHOOL CHILDREN'S SEX EDUCATION NEEDS BASED ON CHILDREN'S COGNITIVE PSYCHOLOGY

According to the research on the physiological and psychological development of modern children, children need to go through different age stages from birth to maturity. Among them, children aged 3-6 years old are called infant, that is, preschool children. Also, this is a period of rapid growth of children and a very important period on the road of human physical development and sound personality [1]. The sex education for preschool children through picture books is easy for children to accept and absorb knowledge, but whether it can adapt to

children's cognitive psychological characteristics and sexual development characteristics at the preschool stage affects the effectiveness of sex education. Therefore, before the design of sex education picture books for preschool children, it is necessary to analyze the cognitive development needs of preschool children according to the physiological and psychological characteristics of children at this stage.

2.1 Cognitive Psychological Characteristics of Preschool Children

According to Piaget's concept of cognitive development, it can be seen that children have four stages of cognitive development. Among them, the pre-operational period refers to the age of 2-6 years old. At this stage, children can think about events through the representation of things in addition to actions. At this time, children's thinking is mostly in the state of using intuition, their judgment of things is mostly based on the appearance, and they perceive things by the image in their consciousness and their own feelings, which lacks certain flexibility. At the same time, children in this period tend to have self-centered thinking, and inject their values into daily thinking and behavior. For example, they will use and repeat a lot of self-centered language in daily conversation. Through the research and induction of children's cognitive psychological characteristics, it is helpful for the design and creation of picture books [2].

2.1.1 Intuitive Thinking

Preschool children have intuitive thinking. When children come into contact with things, they instinctively associate with the appearance of things by thinking in images. More concrete graphics can enhance children's sense of identity. If situational associations or stories can be added to the graphics, it is easier to arouse children's interest.

2.1.2 Self-centered Thinking

Preschool children have self-centered thinking, and they often inject their own values into their daily thinking and behavior. A lot of self-centered language will appear and be repeatedly used in daily conversation. Many designs about children will try to describe a thing from the perspective and mouth of children, which can be closer to children's thinking and cause them to feel close to and like. The education of preschool children in this period should be combined with the situation and

expressed in exaggerated and rich language that children can understand, which is conducive to children's understanding of the language. In addition, the sentences should not be too long and complex.

2.1.3 Sensitivity to Emotions

Children aged 3-4 years old can understand daily conversations, and children aged 4-6 years old can already feel the meaning of different tones in specific situations. Preschoolers are quite sensitive to the expression of emotions. In the communication with preschool children, appropriately magnifying and exaggerating emotions can attract their attention and interest. At the same time, the emotional atmosphere expressed by color and modeling is also quite receptive. As children tend to have a lively, bright and warm atmosphere by nature, it is easier for children to choose light and bright colors in the color atmosphere of picture book design. In graphics, new and unique figurative graphics can trigger children's positive psychological and emotional reactions.

2.2 Sexual Development Characteristics of Preschool Children

2.2.1 Innocent Gender Consciousness

According to Freud's theory, he believes that preschoolers, especially boys, develop a gradual sense of gender about their sexual organs. According to Kohlberg's gender constancy theory, the development of children's gender consciousness is divided into two main stages: the first stage is the basic gender understanding stage during infancy, and the second stage is the gender constancy stage starting from preschool until the end of the early school age. At the beginning of school age, most children can correctly recognize the constancy and unchangeable nature of gender. Preschool children have intuitive thinking and are easy to judge things with the representation of things. Therefore, in the early school age, the gender difference should be added to children's sex education content, focusing on educating children how to better distinguish between men and women, and helping children strengthen their gender awareness.

2.2.2 *Unconscious Play with Sexual Organs*

During the preschool period, children may unconsciously play with their own sexual organs by hand or with the help of other objects. However, this behavior is different from adult masturbation. It will not produce adult sexual desire, sexual intercourse and physiological reaction, but is just a kind of sexual game for children to divert their attention. If parents scold this practice too severely, it may have a negative impact on children's sexual development. Only through patient guidance, can it have a positive effect on children's future development.

2.3 *Analysis on Sexual Education Needs of Preschool Children Based on Children's Cognitive Psychology*

2.3.1 *Content Arrangement in Line with Children's Characteristics*

When conducting sex education for preschool children, appropriate content should be formulated based on the characteristics of children's sexual development at this stage, and correct and standardized sex knowledge should be popularized to children purposefully and systematically. The sex education for preschool children should include comprehensive education in physiology, psychology, morality, self-protection, etc.

As preschool children have intuitive thinking, they often rely on the representation of things to judge the essence of things. In their gender awareness education, they should focus on the fact that the physiological sex is generally constant, and usually does not change due to appearance and behavior. In addition, preschool children should establish correct gender awareness, have a clear understanding of their own physiological gender, recognize their own sexual organs, physiological characteristics and differences between the opposite sex, and learn to protect themselves and respect the differences between others and themselves, respect the privacy of others and accommodate the differences between others' sexual characteristics and their own. Preschool children should also receive appropriate education on love, so that they can learn to love their parents, family members, relatives and friends. Pan Suiming, a sexologist in China, once proposes that children may have little adult love for the opposite sex, but they can learn to have caring and fraternal feelings towards others.

He advocates adding love narration and guidance to preschool children's sex education to help children grow up healthily [3].

2.3.2 *Setting the Plot in Line with Children's Thinking*

As preschool children have intuitive thinking and have not yet mastered the ability of abstract thinking, the situation should be suitable for children's daily life when designing preschool children's picture books, enhancing children's sense of familiarity. In this way, it is helpful for children to understand the story content in the picture books. When children are faced with the same situation in real life, they will also associate with the stories in picture books to deepen their understanding and learning of the educational content of picture books. In terms of the design of character images and the positioning of roles, it is suggested to make creation according to the national character characteristics and cultural background, take children of the same age as the protagonists, and shape parents, teachers and other roles that children are familiar with and agree with as guides, making the visual performance of picture books more persuasive and friendly.

2.3.3 *Visual Presentation to Stimulate Children's Interest*

Children are naturally fond of bright and full colors and tend to warm and harmonious atmosphere. Therefore, in creating the color atmosphere of picture books, they often use bright and saturated colors to stimulate children's visual organs, stimulate children's reading interest, and convey a pleasant and mild feeling. At the same time, in order to avoid confusion of the main graphics and characters of the picture book, it is not appropriate to use too many colors in the design, so as to avoid confusion of children's cognition.

At the same time, preschool children have excellent perception of emotions. The more exaggerated the emotional atmosphere, the more children can be infected. In the design of picture books, it is necessary to magnify the characters' emotions from the aspects of characters' language, expression and body movements, so that children can easily understand the information to be conveyed by picture books.

3. DESIGN STRATEGY OF SEX EDUCATION PICTURE BOOK FOR PRESCHOOL CHILDREN BASED ON CHILDREN'S COGNITIVE PSYCHOLOGY

3.1 Promoting Multi-sensory Presentation of Cognition

Based on the above analysis of children's cognitive characteristics in preschool stage, preschool children can use certain exploration ability to observe and explore an object through a variety of senses, and can more clearly describe what features the object has or what changes have taken place. Therefore, through the combination of visual, auditory, tactile, olfactory and other sensory experiences, it is integrated into the design of picture books. By stimulating multiple senses, children can have a more positive psychological response in the reading process, and have more rich

and profound cognition, which can help preschool children understand and remember the sex education knowledge in picture books.

By replacing the paper with different materials in the picture book, the visual effect of the picture book can be improved, the sensory form of the picture book can be enriched, and the content of the picture book can be perceived by children through touch. For example, embedding simulated animal hair in the picture book or using uneven texture materials can properly stimulate the reading interest of preschool children. The series of picture books "Chicken Chocho" combines the senses of vision, touch and hearing in the design of picture books. Different materials are used to express the tactile characteristics of animal fur. Children can feel the fur texture of different animals through touch when reading, guess what animals are, and press the switch on the picture book to make a chicken shout. ("Figure 1")



Figure 1 Picture Book of Chicken Chocho.

Adding a built-in sounder or using an external point reading device in the picture book design to display the auditory design can also attract the attention of preschool children, and can also exercise children's expression ability through following reading and other ways. The picture book "My Mother's Handbag" designs the shape as a handbag, with a variety of interactive designs. By clicking on different accessories with a reading pen, children can hear different sounds, such as the sound of the clock ticking, the sound effect of shaking the box, the sound effect of perfume spraying, etc., vividly showing the characteristics of various items. The multi-sensory design increases the interest of the picture book, and it is also easy for children to receive and learn the contents of the book. ("Figure 2")



Figure 2 Picture Book of "My Mother's Handbag".

3.2 Interactive Design to Enhance Interest

The sex education picture books for preschool children should be created close to the physical and mental development characteristics of preschool children. In the picture book design, a three-dimensional structure or some small mechanisms full of surprises are used to satisfy the children's psychology of playing games and increase the interesting feeling in reading. In the process of acquiring knowledge, because of the interesting blessing, it not only improves children's interest in picture book reading, but also deepens children's impression of picture book knowledge. In addition, in the drawing of picture books, it is more in line with children's cognitive characteristics and

aesthetic psychology to choose exaggerated and strange shapes. "Our Body", a picture book published in France, presents the abstract biological knowledge intuitively and stereoscopically through various interactive mechanism designs, such as the page of "amniotic fluid bag" simulating the baby in the mother's womb. Human body knowledge such as digestive system, blood circulation, bones and muscles can be displayed by pulling the page. There are also facial expression changes displayed through rotation. The picture book design is full of fun, satisfying children's curiosity and desire to explore. Through rich interaction, preschool children can fully understand the relevant knowledge of human body structure. ("Figure 3")



Figure 3 Picture Book of "Our Body".

3.3 Psychological Color and Emotional Expression

Due to the high sensitivity of preschool children to color and emotional expression, reasonable color matching and slightly exaggerated emotional expression can set off the atmosphere in picture book design, which can stimulate children's visual senses, deepen children's experience, attract their attention and speed up their understanding. At the same time, preschool children's world is mostly self-centered, children's own language has obvious

characteristics, and it is difficult to understand overly complex sentences and information. For example, in daily life, parents and teachers often imitate the language features of children and communicate with children in simple and straightforward language, which is easy for children to understand. Therefore, in the text guidance, it is necessary to avoid the situation of too much didactic meaning in picture books, resulting in children's inability to receive information well. If it can match children's language habits, it can be more effectively close to children's life and psychology.

"Where willy went" is a very popular sex education picture book in recent years. This picture book vividly tells the process of sperm and egg combination in the way of swimming competition. Although the content is simple, it is full of childlike fun. It describes how willy, a swimming master, practices swimming diligently and finally wins the first place in the competition with his perseverance. In the design of this set of picture books, the anthropomorphic image of sperm is lovely and lively, and the colors are mostly bright colors such

as sky blue, light pink, lemon yellow, etc. The use of crayons in painting and the language used are as close as possible to children's language habits, which make the overall tone of the picture book full of innocence and childlike interest. In terms of content, it not only reveals the mystery of the birth of the child, but also conveys the spirit of never giving up. Finally, it ends with the questions of "sperm's math is not good, and Cortana's math is not good, where did willy go", triggering children's thinking. ("Figure 4")

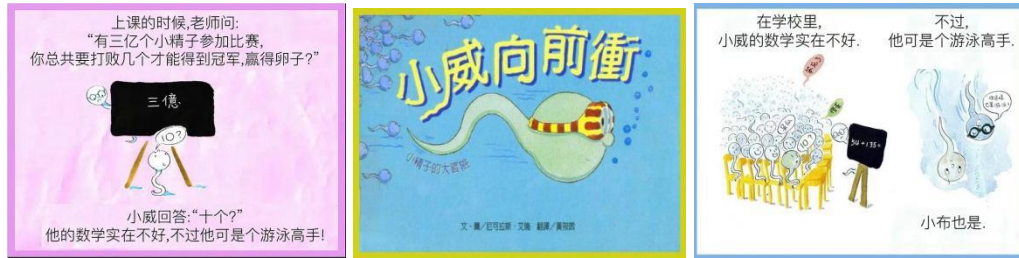


Figure 4 Picture Book of "Where willy went".

4. CONCLUSION

The sex education aimed at the cognitive psychological characteristics of preschool children is conducive to the healthy and comprehensive development of children's personality. It is an important part of quality education and spiritual civilization construction in China, and is related to the health and happiness of children throughout their lives. Picture book is a kind of reading material that can effectively stimulate children's reading interest. Using picture book to carry out sex education for preschool children has a significant effect. Through in-depth research on the cognitive psychology of preschool children, this study analyzes the characteristics of children's sexual development in early school age, proposes that sex education picture books should have content arrangement in line with children's characteristics, plot setting in line with children's thinking, visual presentation to stimulate children's interest, and formulates the design strategy of sex education picture books suitable for this period. This paper studies how to popularize sex education knowledge to preschool children in the form of picture books from three aspects: multisensory presentation to promote cognition, interactive design to enhance interest, and color and emotion expression close to psychology.

Preschool age is a good time to start sex education for children. By studying the presentation method, interactive design and atmosphere

expression of picture books, it is helpful to stimulate preschool children's reading interest, bring children a fun reading experience, popularize correct and reasonable sexual knowledge, cultivate preschool children's sexual morality awareness, improve their self-protection awareness, and improve the situation of lacking sex education today.

AUTHORS' CONTRIBUTION

This paper is independently completed by Yufei Yang.

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