

# Research and practice of medical themed toy design based on role-playing

---

Major: Industrial Design

Student: Cheng Zhiyang

Tutor: Zhao Xuewei & Co-Tutor: Silvia Pericu

Beijing University Of Chemical Technology & University of Genoa



# CONTENTS

*This project is based on the research and practice of role-playing medical themed toy design. The following will start from four aspects.*

## 01

### Introduction

1.1 Research background	8
1.2 Research purposes	12
1.3 Research status	13

## 02

### Users identification and analysis

2.1 Characteristics of children	16
2.2 User research	19
2.2.1 Psychological characteristics	19
2.2.2 Behavioral characteristics	20
2.2.3 Learning characteristics	20
2.3 Personas	21

## 03

### Toy design methods

3.1 Design elements	23
3.1.1 Appearance	23
3.1.2 Materials	24
3.1.3 Color	25
3.2 Design principles	25
3.2.1 Security	26
3.2.2 Age-appropriateness	26
3.2.3 Educational	28
3.2.4 Entertainment	28
3.2.5 Experience	28

## 04

### Design practice

4.1 Game setting	30
4.1.1 Role-playing theme setting	30
4.1.2 Plot setting	32
4.1.3 Role Setting	34
4.1.4 Game process	35
4.2 Design output	46
4.2.1 Sketch	46
4.2.2 Dimension and 3D model	47
4.2.3 Materials and colors	50
4.2.4 Renderings	52
4.2.5 Gaphic design	58
4.2.6 Packaging	61
4.2.7 3D printed model	63

## 摘要

当下，随着物质生活水平的提升，人们对于就医过程、医疗相关产品等提出了更高的要求，即不再仅停留在满足治病需求，人们开始关注诊疗全流程的人文关怀。

儿童病患在接受治疗时显现出的问题尤其明显。儿童在医疗过程中往往表现出紧张、恐惧，甚至抗拒等负面情绪，该问题造成儿童病患、病患亲属、医护人员等在内的多方压力。虽然近年来，对于儿童就医体验的关注有所提升，但仍难以扭转医疗场景在儿童心目中“冰冷”的印象。

角色扮演是参与者在预先设定的故事主题中通过扮演相关角色进行互动活动的一种游戏形式。本研究将基于角色扮演的方式，将玩具和医疗保健相结合，产出对儿童参与医学诊疗有益的医疗主题玩具设计，优化儿童就医体验感，帮助儿童转变面对医疗保健的消极态度，实现辅助儿童身心健康成长的积极作用，从而缓解儿童医疗过程中的多方压力。

**关键词：**角色扮演；医疗主题玩具设计；儿童就医恐惧感

## SOMMARIO

Attualmente, con il miglioramento degli standard della vita materiale, le persone propongono requisiti più elevati per il processo di trattamento medico e prodotti correlati alla medicina, cioè le persone iniziano a prestare attenzione alla cura umanistica dell'intero processo di diagnosi e trattamento invece di soddisfare solo le esigenze di trattamento.

I bambini sono particolarmente problematici quando vengono curati. I bambini spesso mostrano emozioni negative come tensione, paura e persino resistenza nel processo di trattamento medico, che causa pressione sui bambini pazienti, sui loro parenti, sul personale medico e così via. Sebbene negli ultimi anni sia stata prestata attenzione all'esperienza medica dei bambini, è ancora difficile invertire l'impressione "fredda" della scena medica nella mente dei bambini.

Il gioco di ruolo è una forma di gioco in cui i partecipanti interagiscono tra loro giocando un ruolo correlato in un tema della storia preimpostata. Questa ricerca si baserà sul gioco di ruolo, giocattolo combinato e assistenza sanitaria, l'output è positivo per i bambini per partecipare alla diagnosi medica e al trattamento del design di giocattoli a tema medico, l'ottimizzazione dell'esperienza dei bambini, per aiutare i bambini a cambiare di fronte all'atteggiamento negativo dell'assistenza sanitaria, ha assistito il ruolo positivo della crescita sana fisica e mentale dei bambini, in modo da alleviare la pressione multilaterale nel processo di salute dei bambini.

**PAROLE CHIAVE:** gioco di ruolo; design di giocattoli a tema medico; paura dei bambini per le cure mediche

# 01 Introduction

In the case of insufficient service levels, children refuse to cooperate or parents cannot give effective guidance, making it more difficult for children to participate in the medical diagnosis and treatment process, and role-playing has a positive impact on overcoming children's negative emotions in the face of medical care.



## 1.1 Research background

Children's medical care is a key activity closely related to the healthy development of children. The attention of this topic is increasing year by year. Parents and the society are very concerned about this problem and the difficulties behind it. According to interviews and news reports, there is a lack of beds and services in children's hospitals. In addition, children's medical problems also face other challenges. The "difficult to see a doctor for children" has become one of the problems for parents and medical workers.

According to data,  
**95%** of children enter the hospital  
with fear, crying or escaping,  
and children's non-cooperation seriously affects the conduct  
of medical diagnosis and treatment.





### **Role-playing is a comprehensive and creative interactive activity**



Role-playing Mobilize your own cognition and emotion to a great extent, get a profound experience, and change your previous views and concepts about things. Role-playing is widely used nowadays, with popularization of ideas, classroom learning, game communication and so on.



For children, role-playing is an important means of children's growth stage education. It not only meets the laws of children's physical and mental development, but also releases children's nature.



**Through role-playing, children can better communicate, perceive, understand, experience and share medical topics.**

**The themed toys derived from role-playing play a positive role in helping children overcome the negative emotions in the face of medical treatment.**

#### **Guide**

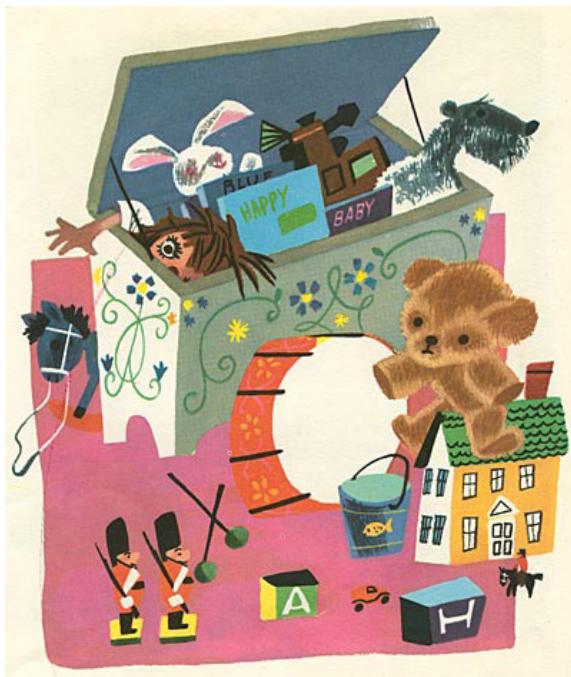
The theme toy design allows children to participate voluntarily, and uses this sense of voluntariness as a driving engine to guide more children to participate in the process of medical diagnosis and treatment. The theme toy design can make children full of curiosity in the medical process, thereby reducing fear, driving children to participate, and taking this sense of autonomous participation as the core driving force in the medical diagnosis and treatment process.

#### **Promotion**

Children can interact with themed toys for a relatively long time. Children's participation in medical diagnosis and treatment is a series of experience activities composed of behaviors. Participation, concentration and loyalty to the goal in the process play an important role. Therefore, combining the design of themed toys with children's medical activities can enhance the user's interest and participate in the completion of medical activities with more positive emotions.

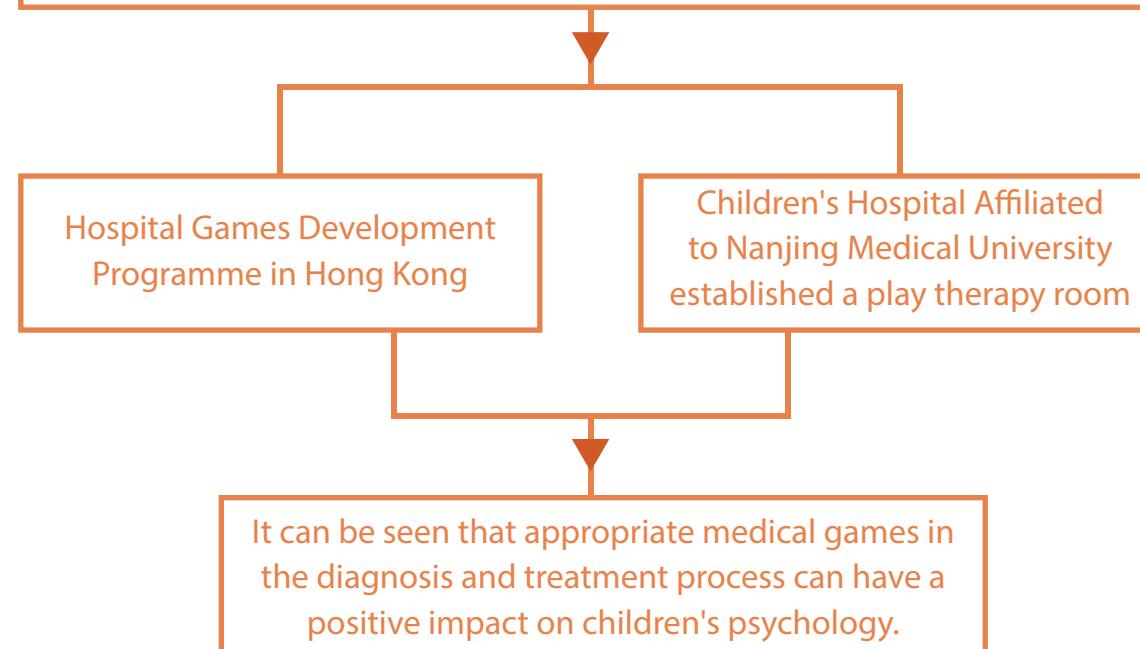
## 1.2 Research purposes

Themed toys are very popular among children, combining children's familiar toys with medical diagnosis and treatment will alleviate children's fears to a certain extent, and will also help improve children's medical knowledge. children's negative emotions in the real medical treatment scene can be relieved and medical workers can carry out their work conveniently.



## 1.3 Research status

From the perspective of the research status at home and abroad, it is found that there are few studies on medically assisted toys, but the development of children's medically assisted games has been in the exploratory stage, and some cities have started to practice game-based therapy.



There are some medical-themed toys on the market, but they are all similar. I will choose one of them for analysis.



<b>S</b> <p>This set of toys is in line with medical themed toys. The toys are cute in shape and bright in colors, which attract children to play.</p>	<b>W</b> <p>The toy is just a modification of the shape, the medical process and medical common sense have not been learned.</p>
<b>E</b> <p>This toy makes children like to play the role of a doctor, and to a certain extent change the doctor's stereotype in mind.</p>	<b>T</b> <p>There is a gap between the operation of the toy and the actual situation, which is too ideal and may cause misunderstanding</p>



*"Children's Product Design in the Digital Age" emphasizes that the design of children's toys and the design of popular products must be distinguished and learn from each other. Therefore, the pertinence and uniqueness of the design should be fully considered in the design and development of the product.*

## 02 Users identification and analysis

In the process of product design, considering the psychological and behavioral characteristics of children of different ages, children aged 3-6 are finally determined as the main research objects, so that medical-themed toys are more in line with the requirements of children's growth and society.



## 2.1 Characteristics of children

The development of children at the age of 0-6 is of great significance to the development of a person's life. Children also grow and develop rapidly during this period. Therefore, I subdivided the stage of 0-6 years into the following six stages to analyze children one by one.

### Refinement of children's characteristics at the age of 0-6



**At 0-6 months**, the sensory level is limited, and most of them are active in bed. Children at this stage prefer brightly colored toys that can make sounds, such as castanets and rattles.



**At 7-12 months**, children can learn to sit, learn to crawl, and even learn to walk and talk, and they like to touch objects with their mouth and nose. Parents generally choose toys that can exercise his mobility.



**At the age of 1-2**, children can master less basic vocabulary and their thinking level has improved. At this time, simple operable toys, jigsaw puzzles, and simple educational toys are all suitable.



**At the age of 2-3**, children are keen on running and jumping. Curiosity, observation ability, and imitating ability are all improved. Toys that develop brain contribute to the development of children's abilities.



**At the age of 3-4**, children have improved social skills and like to show their independence by imitating adults. Therefore, educational toys that are interactive and exercise thinking are more suitable.



**At the age of 4-6**, children are more curious about exploration. At this time, children's expression ability, thinking ability, and judgment ability are all developing. Challenging toys are more likely to attract children's attention and stimulate children's interest.

*In the "3-6 Years Old Children's Learning and Development Guide", it is mentioned: "Children's learning is based on direct experience and is carried out in games and daily life... To maximize support and satisfaction of children through direct perception and practical operation And the need for personal experience to gain experience"*

**In summary  
3-6 years old preschool children  
are the target users**

## 2.2 User research

From the above, the main research objects are determined to be 3-6 years old preschool children. The following carefully analyzes the characteristics of this group from three aspects.



**Psychology**



**Behavior**



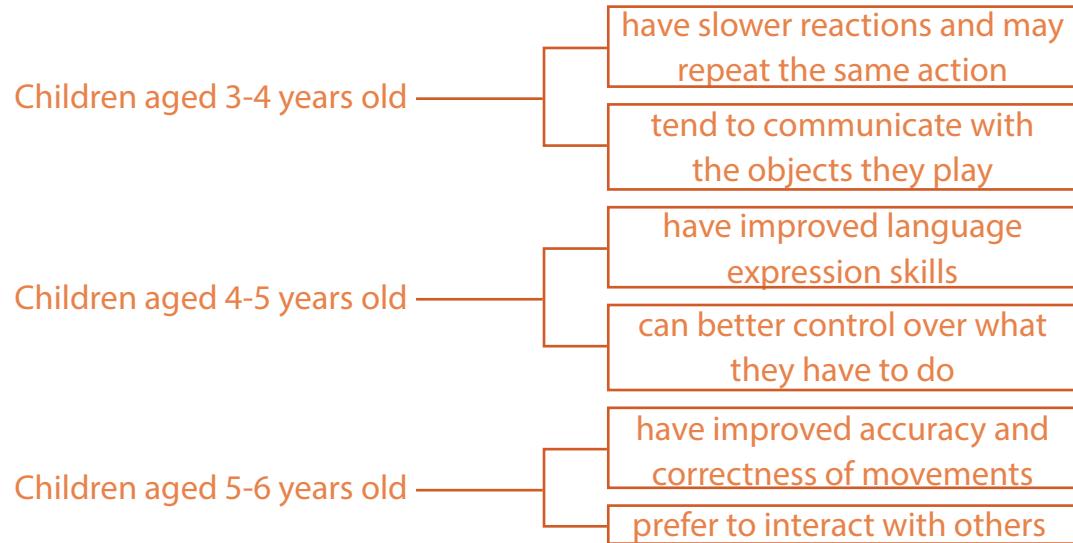
**Learning**

### 2.2.1 Psychological characteristics

Children aged 3-6 are more curious about their surroundings, and hope to get in touch with, try and even challenge new things. They are good at observing and imitating, but they have limited time for concentration, weak concentration and poor self-control. They usually gain unconscious learning in practice based on their own interests.



## 2.2.2 Behavioral characteristics



## 2.2.3 Learning characteristics

Children's learning is a behavior that adapts to the environment. Imitation and observation are effective ways. Imitation mainly exercises expression ability. Observation is a pavement for brain movement. Preschoolers rely on interest and experience to imitate and observe, that is, unconscious learning.



## 2.3 Personas

Interview two children between the ages of 3-6 and make personas.



Zhang Yidong  
6 years old  
Timid

He once concealed his parents' illness because he was afraid of going to the hospital, which caused his illness to worsen.

**Are you afraid to go to the hospital?**

*Yes, hospitals are the scariest places in the world.*

**Can you tell me why?**

*I often get sick, my mother always take me to the hospital to needle, it's pain. And doctors always give me terrible medicine.*

**His fear of hospitals stems from the pain of medical process.**

Every time she goes to the hospital, she cries loudly. She is very uncooperative with the doctor's examination.

**Are you afraid to go to the hospital?** Yes.

**Can you tell me why?**

*Many children were crying, I was scared, everyone in the hospital seemed to be unhappy, no one smiled at me. There are no toys in the hospital, but the playground is fun*

**Her fear comes from the fear of the hospital environment.**



Zhou Guoguo  
4 years old  
Shy



# 03 Toy design methods

When going deep into the design research, consider the elements of toy design and follow the principles of toy design.



## 3.1 Design elements

The following discusses three aspects of toy design elements in turn.



Appearance



Materials



Color



### 3.1.1 Appearance

The appearance of toy design needs to combine actual and exaggerated elements to meet the two needs of simulation and curiosity. On the one hand, they can obtain a sense of "mature" satisfaction. On the other hand, it does not lose the innocence and fun, so children have a higher acceptance of such toys. The role of appearance is to attract children's attention and increase their enthusiasm for active play and exploration.



### 3.1.2 Materials

The choice of materials mainly focuses on  and 

The commonly used materials for children's toys are plastic, cloth, wood.

	.....	cotton cloth	.....	1. good skin affinity 2. a intimate feeling
	.....	wood	.....	1. close to nature 2. a warm feeling
	.....	plastic	.....	1. various color 2. low cost

### 3.1.3 Color

Designers and users can communicate emotionally through color. When designing toys, it is necessary to consider from the perspective of children, understand children's inner thoughts and feelings, and use colors to attract children's attention.



## 3.2 Design principles

The following will discuss the five aspects of toy design principles



**Security**



**Entertainment**



**Age-appropriateness**



**Educational**



**Experience**

### 3.2.1 Security

- As far as materials are concerned, designers need to choose carefully and test repeatedly. Wood, plastic and foam are safer.
- The fineness of the parts also need to be paid attention to. For children aged 3-6, the parts of the toy should not be too fine and the volume should not be too small, because children may be in danger of swallowing.
- Sharp corners should be avoided when designing, and rounded corners should be selected to reduce the possibility of scratching children.

### 3.2.2 Age-appropriateness

Age-appropriateness requires the design of toys to conform to the user's psychological and physical characteristics. Specific requirements for the characteristics, functions, and connotations of toys not only meet children's preferences, but also help enhance their knowledge reserves and bring them closer to social requirements.



Under this principle, the specific requirements are:

First, toys should be able to develop the user's language and cognitive abilities;

Second, the children's athletic ability at this stage is in the growth stage, so toys should have the effect of promoting users to exercise their physical fitness or improve their hands-on ability;

Third, useful toys should meet the cognitive level of children of this age and help them better interact and connect with society.

Finally, the design of toys should avoid the phenomenon of children's "cannot play" due to play and operation.

Therefore, for the 3-6 aged, the difficulty of operation should be reduced, the framework should be simplified, the process should be more interesting.



## 4.1 Game setting

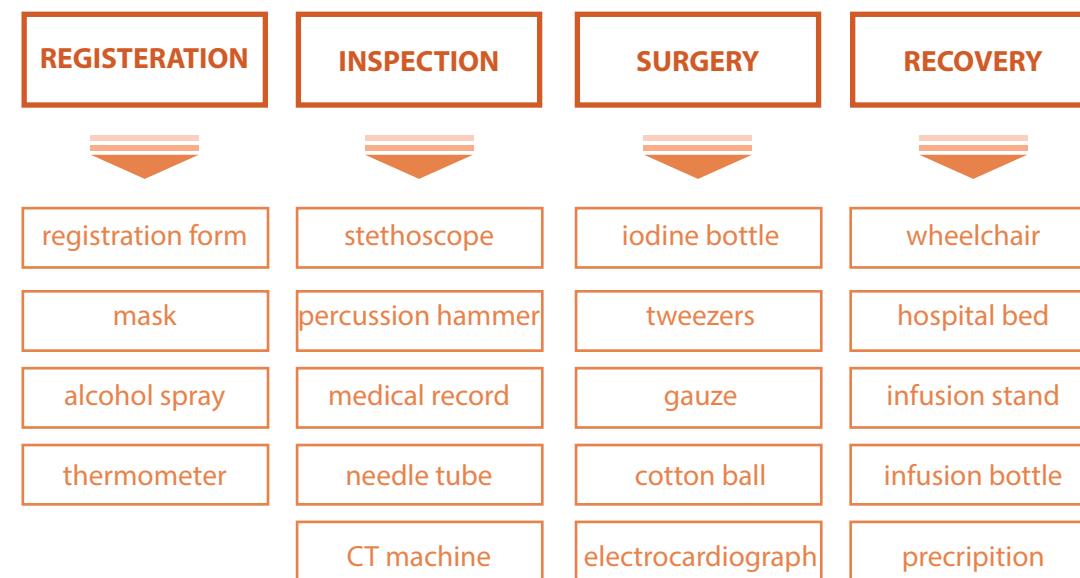
Design a set of role-playing toys with the theme of medical diagnosis to help children reproduce the familiar scene of seeing a doctor in life. Items related to the subject, such as thermometers, stethoscopes, needles and other tools, need to run through the entire role-playing process. In the game, guide children to create relevant situations, such as registration, diagnosis, dripping and so on.



### 4.1.1 Role-playing theme setting

The theme of this role-playing is the medical diagnosis process. It targets minor illnesses in children's daily life, such as colds, coughs, falls, etc. It mainly eliminates children's fear of normal medical care and increases the degree of cooperation between children and doctors.

First of all, it is necessary to clarify a set of inspection procedures. The four parts of registration, inspection, surgery, and recovery are the entire procedure of going to the hospital (subject to the condition). Secondly, find out which medical products are involved in the four parts of registration, inspection, surgery, and recovery, which can be designed.



## 4.1.2 Plot setting

In the four processes mentioned above, four situational reminder cards are set respectively to guide children. In addition to these four, two scenario reminders for infusion and wound treatment were also designed to expand the possible scenarios of the game and help children stimulate their imagination to create more plots. The scenario card will contain some common medical knowledge to help children accumulate and learn more knowledge.

### Scenario 1: Registration

You must wear a mask when you go to the hospital, and cooperate with the doctor at the door for temperature measurement and disinfection. You need to be registered

*Is this the registration office?*

*May I ask what department do I need for my stomachache?*

What would you do?

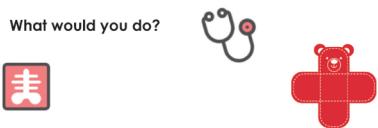


### Scenario 2: Inspection

Diagnosis includes consultation and a series of examinations. During the consultation process, answer the doctor's questions seriously. The inspection machine will not hurt you, it is to inspect what is wrong with your body, you must cooperate quietly

*When the stethoscope touches the body, it will feel cold, don't be afraid*

What would you do?



### Scenario 3: Surgery

Before the operation, the doctor will give the patient anesthetic to reduce the pain caused by the operation. The seemingly cold instruments in the operating room, such as ECG instrument, are actually detecting your heartbeat and ensuring your life is safe. They are your patron saint

*Children do not need surgery when they get sick every day, only serious illnesses*

What would you do?



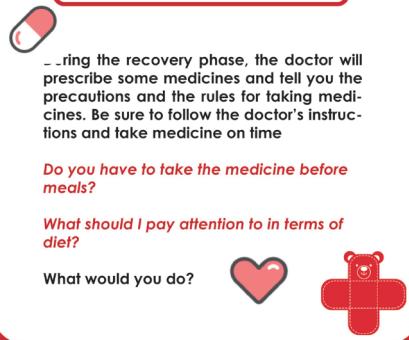
### Scenario 4: Recovery

During the recovery phase, the doctor will prescribe some medicines and tell you the precautions and the rules for taking medicines. Be sure to follow the doctor's instructions and take medicine on time

*Do you have to take the medicine before meals?*

*What should I pay attention to in terms of diet?*

What would you do?



### Scenario 5: Infusion

During the infusion, call the nurse immediately after the medicine is infused. Don't cry or move around during the infusion.

*Why can't I move when I infusion?*

*Aunt nurse can be lighter when getting the needle?*

What would you do?



### Scenario 6: Wound treatment

Wounds must be treated in time to prevent infection. Bleeding severely asks the doctor for help.

*What if the wound is infected?*

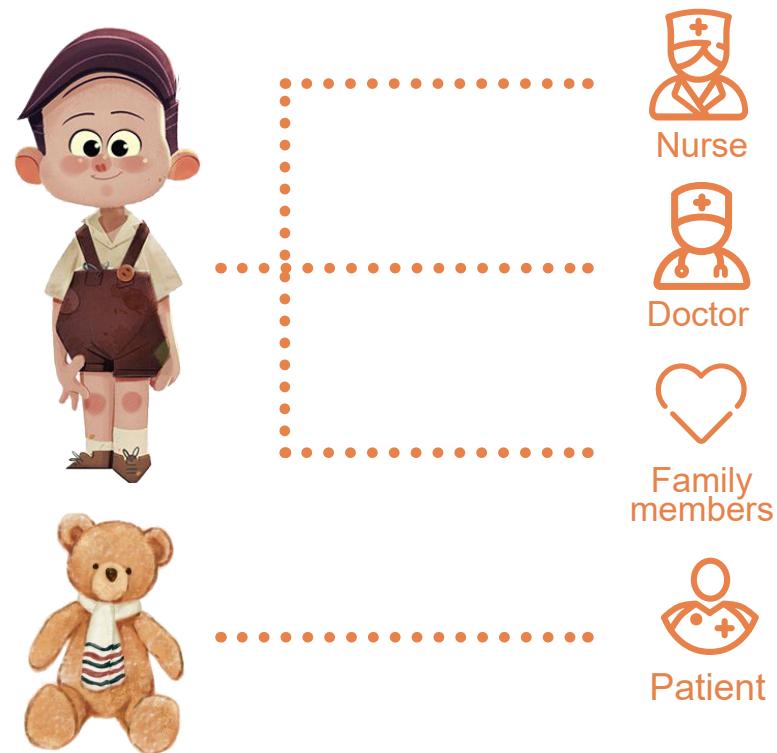
*Can I make 120 calls anytime?*

What would you do?



### 4.1.3 Role Setting

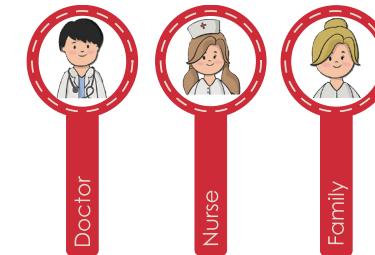
Under this theme, let the child play the role of a nurse, doctor or family member, and leave the role of the patient to the doll bear. By treating the doll bear to the doctor and facing the stuffed toy that he is familiar with, the children will be more relaxed and more active in their thinking during the role-playing process.



### 4.1.4 Game process

#### Step 1

Children draw lots or choose the role they want to play.



#### Step 2

The bear is sick, and his family will take him to "Bear Medical Station" to see a doctor.

(Children can prescribe that the bear has a cold, has a fever, has a fall, etc.)

#### Step 3

The game starts, welcome to "Bear Medical Station"



## Scenario 1: Registration

You must wear a mask when you go to the hospital, and cooperate with the doctor at the door for temperature measurement and disinfection. You need to be registered

*Is this the registration office?*

*May I ask what department do I need for my stomachache?*

What would you do?



1.wear mask

scan bear's head (built-in chip)



2.take body temperature

press down



3.alcohol disinfection

PATIENT MEDICAL EXAM			
PATIENT NAME : _____			
Where does it HURT ?			
<input type="checkbox"/> Eyes	<input type="checkbox"/> Head		
<input type="checkbox"/> Nose	<input type="checkbox"/> Shoulders		
<input type="checkbox"/> Throat	<input type="checkbox"/> Heart		
<input type="checkbox"/> Torso	<input type="checkbox"/> Arms		
<input type="checkbox"/> Tummy	<input type="checkbox"/> Leg		
<input type="checkbox"/> Bum	<input type="checkbox"/> Ankle		
<input type="checkbox"/> Feet	<input type="checkbox"/> Toes		
DIAGNOSIS : _____			
TREATMENT :			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DOCTOR SIGNATURE : _____			

4.fill in the condition

## Scenario 2: Inspection

Diagnosis includes consultation and a series of examinations. During the consultation process, answer the doctor's questions seriously. The inspection machine will not hurt you, it is to inspect what is wrong with your body, you must cooperate quietly

*When the stethoscope touches the body, it will feel cold, don't be afraid*

What would you do?



1. inquiry



stethoscope



percussion hammer

2. examination



*enter the CT machine, the prompt light turns on*



*take blood for routine blood testing*

**+** PATIENT MEDICAL EXAM

PATIENT NAME : \_\_\_\_\_

Where does it HURT ?

<input type="checkbox"/> Eye	<input type="checkbox"/> Head
<input type="checkbox"/> Nose	<input type="checkbox"/> Shoulder
<input type="checkbox"/> Throat	<input type="checkbox"/> Heart
<input type="checkbox"/> Stomach	<input type="checkbox"/> Arm
<input type="checkbox"/> Back	<input type="checkbox"/> Leg
<input type="checkbox"/> Feet	<input type="checkbox"/> Knee
	<input type="checkbox"/> Tooth

DIAGNOSIS : \_\_\_\_\_

TREATMENT :

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

DOCTOR SIGNATURE : \_\_\_\_\_

3. determine the condition

## Scenario 3: Surgery



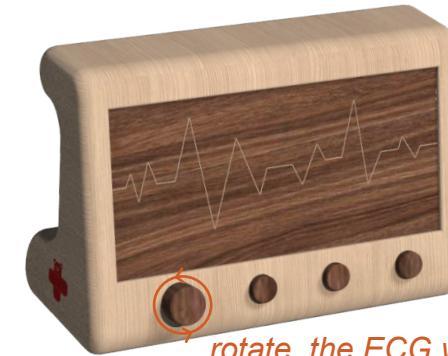
Before the operation, the doctor will give the patient anesthetic to reduce the pain caused by the operation. The seemingly cold instruments in the operating room, such as ECG instrument, are actually detecting your heartbeat and ensuring your life is safe. They are your patron saint

*Children do not need surgery when they get sick every day, only serious illnesses*

What would you do?



*electrocardiogram equipment to detect life status*



*rotate, the ECG will move*



*injected the anesthetic*



*use tweezers to take a cotton ball and dipped in iodine for disinfection*



*Gauze for wound dressing*

## Scenario 4: Recovery



During the recovery phase, the doctor will prescribe some medicines and tell you the precautions and the rules for taking medicines. Be sure to follow the doctor's instructions and take medicine on time

*Do you have to take the medicine before meals?*

*What should I pay attention to in terms of diet?*

What would you do?



**MEDICINE PRESCRIPTION**

PATIENT NAME : \_\_\_\_\_

Medicine: 1  2  3   1  2  3  

1x  2x  3x  PER DAY 1x  2x  3x  PER DAY

DOCTOR SIGNATURE : \_\_\_\_\_



1. doctor prescribes medicines and infusions according to the condition.

2. hospitalized for infusion



3. get better and went home in a wheelchair



*built-in sensor in bear hand*

*squeeze bear's hand, he will say "thank you"*

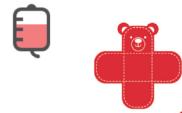
### Scenario 5: Infusion

During the infusion, call the nurse immediately after the medicine is infused. Don't cry or move around during the infusion.

*Why can't I move when I infusion?*

*Aunty nurse can be lighter when getting the needle?*

What would you do?



### Scenario 6: Wound treatment

Wounds must be treated in time to prevent infection. Bleeding severely asks the doctor for help.

*What if the wound is infected?*

*Can I make 120 calls anytime?*

What would you do?



These two scenes are also included in the above four big scenes, but I think the two of me can stimulate more imagination and creativity of children, and hope that children will produce more stories. I will also design more medical-themed toys and reminder cards based on children's feedback.

### Instruction Book

Bear Medical Station is a medical-themed role playing game. The game is mainly to release the negative emotions of 2-4 years old children before medical diagnosis, cultivate children's empathy in role-playing, and learn some medical concepts at the same time.

This game contains 17 products, 6 situational reminders, a medical record, a prescription, and a role card.

**Step 1**  
Children draw lots or choose the role they want to play.

**Step 2**  
Pick up the family and take lots to "Bear Medical Station" to see a doctor.  
(Children can pretend that the bear "has a cold", "has a fever", "has a fall", etc.)

**Step 3**  
The game starts, welcome to "Bear Medical Station".

Open 11 of 12 complete medical operations, operations 9 and 10 are optional scenes to stimulate children's imagination and generate more contextual dialogues.

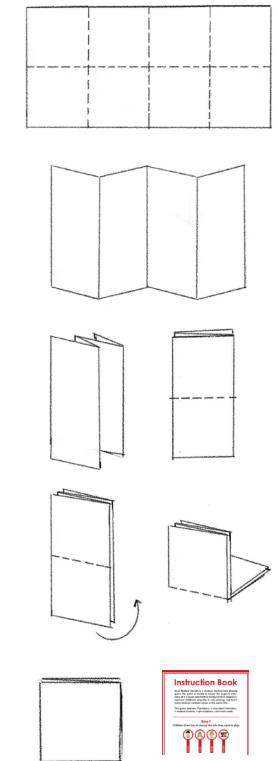


Front

### Bear Medical Station

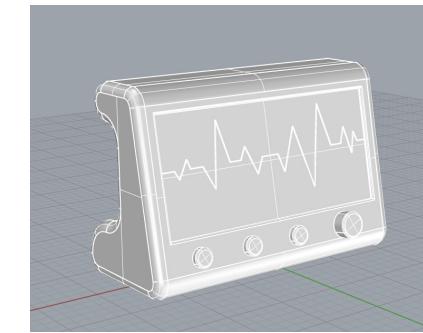
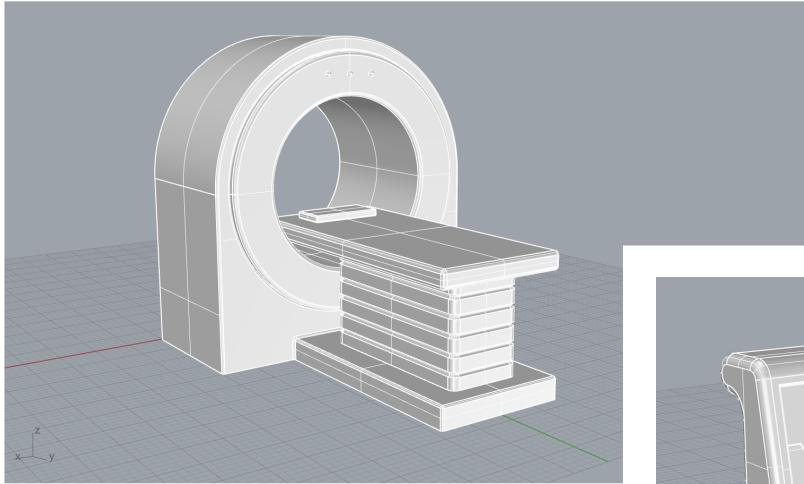



Back

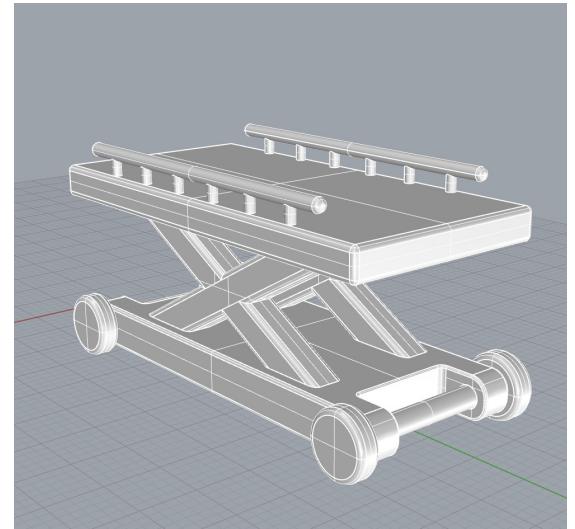
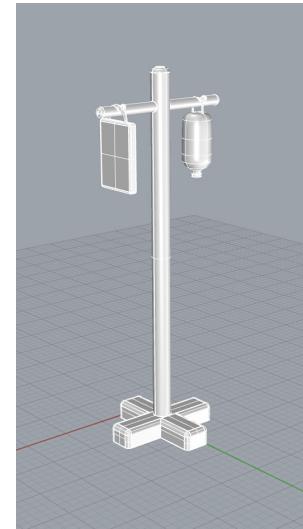
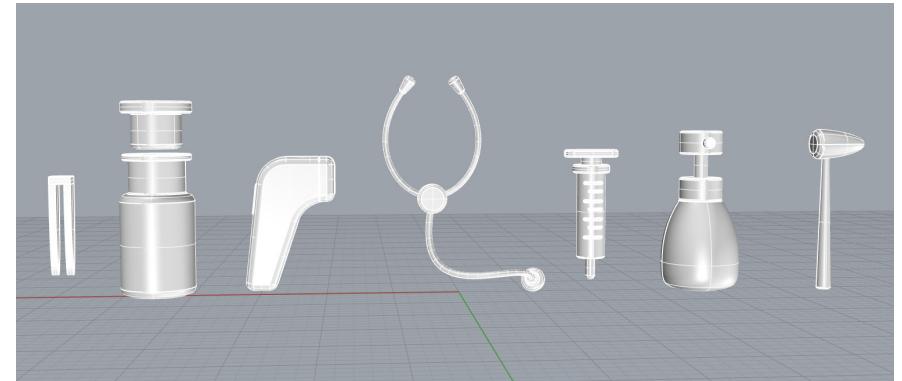
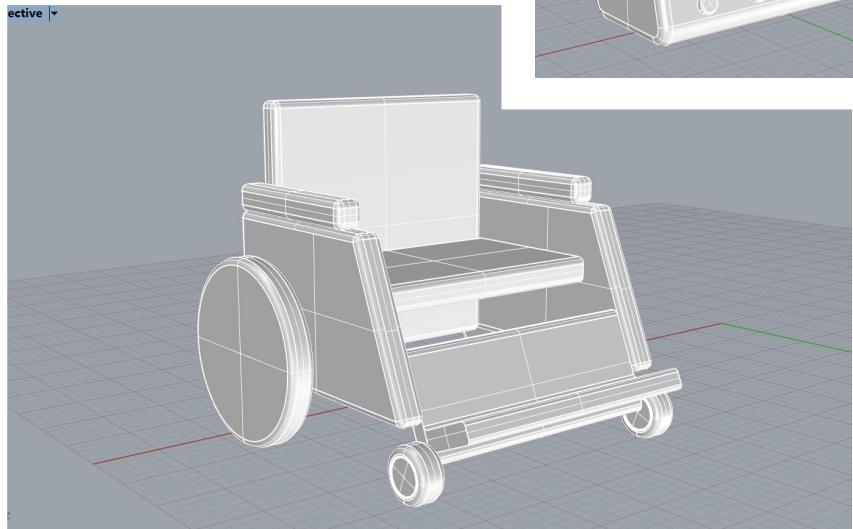


Summarize the game process into instruction book, with medical exam and medicine prescription, and children can cut it directly from the instruction.





ective ▾



### 4.2.3 Materials and colors

Wood is milder than metal, and more durable than plastic. Therefore, wood is used to make a complete toy. This set of toys is a redesign of medical appliances and medical products. The stereotype of medical products is cold and serious. The wood gives people an overall feeling of warmth and affinity, which can reduce children's negative emotions when participating in the medical process.

The most commonly used materials for wooden toys on the market are: beech, pine, and lotus:

	Beech	more expensive; most high-end wood play brands use it	
	Pine	cheap; low quality ; less resistant than other woods	
	Walnut	good molding effect; not easy to deform; expensive	

Color: retain the original color of the lotus. Although the original color of wood is slightly monotonous, which is different from the bright color of plastic, the large number of irregular patterns on the surface of the wood increase the richness of the wood color.



Moodboard

#### 4.2.4 Renderings



The shape of my set of toys is a simplified design of the shape of actual medical products, so as to meet the requirements of children's toys. The following is a comparison chart.



**CT machine**  
*53cm\*40cm\*44cm*



**Wheelchair**  
*28cm\*26cm\*24cm*



**Hospital bed**  
*41cm\*20cm\*21.5cm*



**Infusion stand**  
*12cm\*12cm\*15.85cm*



**Electrocardiograph**  
*15cm\*6.78cm\*10cm*



**Thermometer**  
*6cm\*2cm\*9cm*



**Alcohol spray**  
*5.5cm\*5.5cm\*11.2cm*



**Iodine bottle**  
*5cm\*5cm\*10.4cm*



**Needle tube**  
*3.7cm\*2.6cm\*9cm*



**Tweezer**  
*2.8cm\*1.4cm\*6.7cm*



**Stethoscope**  
*6.75cm\*2cm\*9.5cm*



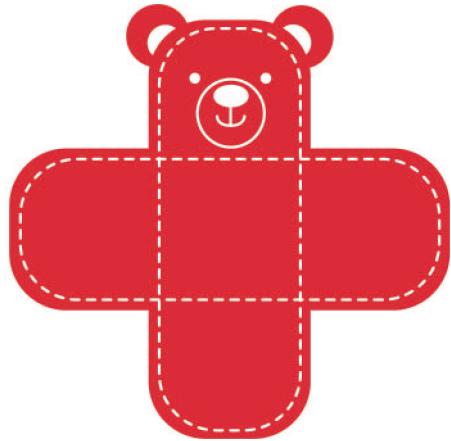
**Percussion hammer**  
*3.8cm\*1.8cm\*11.4cm*



**Infusion bottle**  
*5.2cm\*5.2cm\*12cm*

#### 4.2.5 Graphic design

As shown in the picture, the logo of the toy is inspired by the wound tape. The wound tape is a must-have item for solving small wounds in our daily life. It is the same normal mentality to see a doctor when you are sick and to find a wound tape. The toy design uses the doll bear as a medical patient, so the band-aid and the doll bear are combined. The two band-aids are crossed like a hospital cross, reflecting the theme of the toy is health care, and the white dotted line is more cute. The red logo and wooden products also match very well.





## PATIENT MEDICAL EXAM

PATIENT NAME : \_\_\_\_\_

Where does it **HURT** ?

Eyes

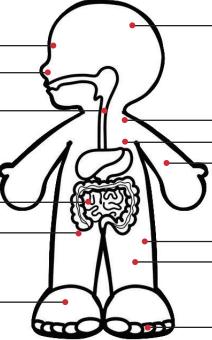
Nose

Throat

Tummy

Bum

feet



Head

Shoulders

Heart

Arm

Leg

Knees

Toes

DIAGNOSIS : \_\_\_\_\_

TREATMENT :









DOCTOR SIGNATURE : \_\_\_\_\_

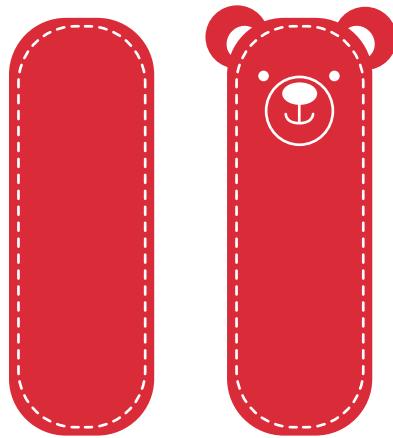
**MEDICINE PRESCRIPTION**

PATIENT NAME : \_\_\_\_\_

Medicine: 1  2  3        Medicine: 1  2  3  

1x  2x  3x  PER DAY      1x  2x  3x  PER DAY

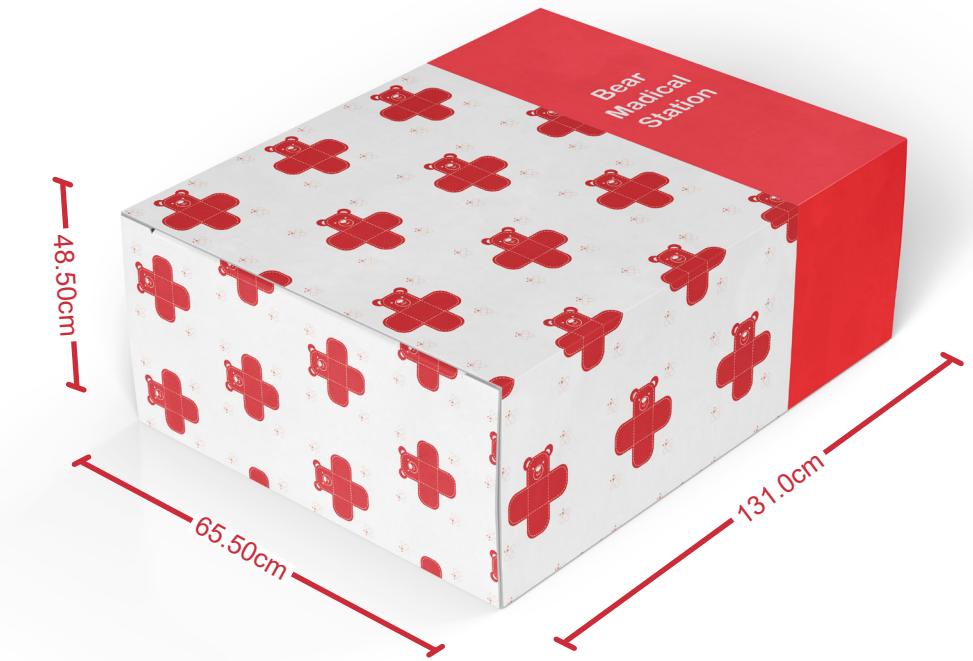
DOCTOR SIGNATURE : \_\_\_\_\_



Derived from the logo and designed a band-aid

#### 4.2.6 Packaging

This game contains 17 products, 6 situational reminder cards, 4 role cards, instructions (medical records and prescriptions), all of which are packed into a big gift box.





# Reference

- [1] 郜鹏飞. 游戏化设计在儿童参与医疗保健中的引导促进策略研究[D]. 广东工业大学, 2018
- [2] 郑洁, 王欣悦, 吴道义. 基于儿童心理特征的医疗产品设计研究[J]. 北京印刷学院学报, 2020, 28(08): 56-59
- [3] 周娱菁. 角色扮演法在儿童青年抑郁症患者社交训练中的应用[J]. 中国社区医师, 2019, 35(34): 25-26
- [4] 曹向红. 关于幼儿角色扮演的几点思考[J]. 才智, 2019(21): 130
- [5] 程明. 新奇玩具畅销全国 打工女赚来巨大财富[J]. 现代营销(创富信息版), 2011(04): 13
- [6] 文志君. 英国角色扮演玩具弱市奇兵[J]. 中外玩具制造, 2012(09): 60-62
- [7] 巫叶萍. 基于教育功能的学龄前儿童智能玩具设计研究[D]. 江苏大学, 2019
- [8] 季又君. 基于教育功能的学前儿童玩具设计研究[D]. 昆明理工大学, 2009
- [9] 梁庭博. 基于认知心理学的3-6岁儿童科普类玩具产品设计[D]. 山东大学, 2020
- [10] 中国教育部. 3-6岁儿童学习与发展指南[EB/OL]. [http://www.moe.gov.cn/srcsite/A06/s3327/201210/t20121009\\_143254.html](http://www.moe.gov.cn/srcsite/A06/s3327/201210/t20121009_143254.html), 2012-10-09
- [11] 张梦雨. 儿童益智玩具互动设计研究[D]. 北京化工大学, 2018
- [12] Schaper E. Taste, sublimity, and genius: The aesthetics of nature and art[J]. 1992
- [13] 李成秀. 浅谈儿童患者的心理特征及护理[J]. 吉林医学, 2010, 31(11): 1557-1558
- [14] 刘晓丽. 班图拉的社会学习理论及其对幼儿教育的启示[J]. 教育教学论坛, 2010(03): 32-33

- [15] (瑞士) 皮亚杰. 儿童心理学[M]. 吴福元译. 北京: 北京商务印刷书馆, 1994
- [16] 杨廷忠, 于文平, 黄丽. 行为改变的一种策略和方法: 行为分阶段转变理论模型介绍[D]. , 2002
- [17] Csikszentmihalyi M, Csikszentmihalyi M. Flow: The psychology of optimal experience[M]. New York: Harper & Row, 1990
- [18] Domínguez A, Saenz-de-Navarrete J, De-Marcos L, et al. Gamifying learning experiences: Practical implications and outcomes[J]. Computers & education, 2013, 63: 380-392
- [19] 邢亚龙, 王宏. 儿童玩具的互动性设计探索[J]. 扬州职业大学学报, 2009, 13(02): 30-32
- [20] 张家妍, 沈警阳. 儿童玩具设计研究[J]. 大众文艺, 2019(12): 115-116
- [21] Kriklenko E. Complex bending-active structures from continuous flexible planar sheets or a hybrid structure introducing the use of spacer fabrics[J]. Architectural Engineering and Design Management, 2020: 1-22
- [22] Rashid A A, Ai T C, Hisham R, et al. Effectiveness of pretend medical play in improving children's health outcomes and well-being: a systematic review[J]. BMJ Open, 2021, 11(1): e041506
- [23] 张芷盈. 英国厂商的独到见解——毛绒玩具长盛不衰源自情感[J]. 中外玩具制造, 2012(12): 68-71

