

# Design and Application of Experimental Fonts for Interactive Chinese Character Games

Yifan Hu

Fuzhou University, Xiamen 361000, Fujian Province, China

**Abstract:** In modern days, font design presents a variety of ways of expression. In addition to the well-known font library, font design is increasingly moving in the direction of graphic design, in hope of better expressing the effective information targeted at users. Among them, the emergence of experimental fonts allows font designers to continuously explore and innovate. At the same time, it also brings out more creativity, possibility and interest to Chinese characters designers, while yielding different visual effects in graphic design. In the experimental design of interactive Chinese character games, I hope to find more suitable methods and expressions for font design during the trial process.

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**\*Corresponding author:** Yifan Hu, 1241658069@qq.com

## 1 Investigation and Analysis of Experimental Font Design

Designers usually disassemble and reorganize the strokes of Chinese characters for design. The visual effect is achieved by changing the form of Chinese characters. For example, interesting fonts are produced by the thickness of the strokes, the changes of the main and the second strokes, the increase or decrease in strokes, and the graphicization of the shape of the strokes. The author will analyze the application of interactive Chinese character games in design through experimental Chinese character games.

### 1.1 Application of Design in Literacy Toys and Puzzles

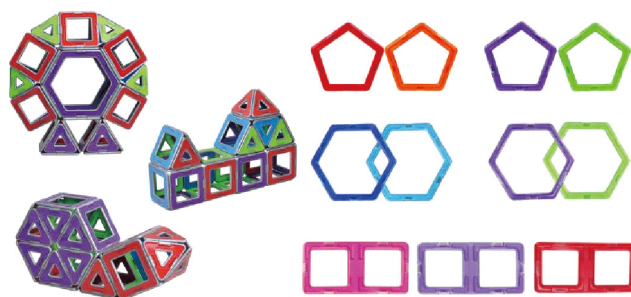


Figure 1. Children's cognitive toys

Parents have always been paying attention to educational toys, and many designers still continue to explore on how to innovate educational products. Compared with foreign countries in the design of children's educational toys, mainland Chinese designers will ignore the psychological transformation of preschool children. This is also one of the defects in educational toys. Designers often ignore the changes in children's cognitive psychology in Chinese character games. Currently, there are more than 100 million parents in China who pay attention to the educational problems of preschool children and the educational and innovative nature of related educational toys<sup>[1]</sup>. There are also many educational toys in the market today, such as building blocks and wooden cubes that people can easily think of. But this kind of educational toys cannot meet the psychological cognition of preschool children and the expectations of parents. In the design of educational toys, designers need to fully understand the mental state and physiological traits of children in three different stages of preschool, schooling and post-school age according to the child's growth stage.

Carrying out the effective design of educational toys according to different materials, structures, shapes, and colors etc. (Figure 1). Toy puzzle design is also an experimental design. The understanding and recognition of children's psychology and physiology will make designers take design considerations on the basis of experiments. Therefore, the puzzle design for children of pre-school, schooling, and post-school ages is just like experimental design or experimental font. It is a process of continuous trial and has a certain degree of differentiation and recognition.

## 1.2 Analysis of Interesting Font Design



Figure 2. Font experiment theatre

Fun font design is a design that undergoes transformations in font shape and decorative effects in font design. At the same time, the shape of the font is changed in the continuous trial and exploration. Fun is one of the characteristics of experimental fonts. In experimental fonts, fun not only makes people happy, excited, and curious, but also allows people to try new design research or bring different design ideas and thoughts. Usually font design is considered by designers to be highly recognizable, and the design is relatively simple to convey the message that recipient wants to convey. Experimental fonts often give people the feeling that they are not bored at the beginning and the results are unknown. There will be new discoveries and different results in every experiment. In today's fast-paced lifestyle, there are many variations in font design, and it's no longer sticking to conventions. Designers gradually integrate interesting elements into font design, and even integrate real social issues in it to make the design warmer on the basis of recognition and

interest. For example, in the temperature performance of the interesting experimental font design, there is a "flower (hua)" font about Zhang Ailing. (Figure 2) "Flower (Hua)", the emotional inspiration of this font design comes from a well-known love poem written by Zhang Ailing to her admired Hu Lancheng: "When she saw him, she became very low and lower. Low to the dust, but the heart is rejoicing, and flowers bloom from the dust." Pollen was chosen as the carrier of this font, because pollen is light, elegant and has the characteristics of just budded and strong vitality, and there's nothing more suitable to express Zhang Ailing's love. As a result, the delicate texture and hazy edges of the pollen perfectly presented the feeling of "love" I wanted to express. This experimental font example is used as the font design for the experimental emotion theater. In the experiment, it is constantly trying to express the meaning and emotion to be conveyed. The design is both interesting and warm to the font design.

## 1.3 Game Experience Font Design

Font design emerges endlessly in designer's innovation. Beside the element of fun incorporated to make the audience feel interesting and amusing, the experimental font of the game is mainly used to express the free, unfettered and creative design thinking. For example, "character games, word changing games, crosswords, brain skills, and I love word guessing puzzles, etc." appeared earlier in the design of Chinese character games. In the field of design, Chinese character games have become greater and greater, which arouses people's curiosity and interest. The experimental design of game experience is closely related to the audience and they complement each other. The audience plays the role of the user of the overall font of the game experiment, and also acts as the interactors in the design work.

## 2 The Purposes and Meaning in Topic Selection

### 2.1 Selected topic purpose

Purposes of Topic Selection Experimental font refers to the process of questioning, overthrowing, and subverting existing forms, and predicting, practicing, transforming, and exploring the possibility of font design and the results brought about by it. Throughout these practices, they all show more or less the influence of certain styles and ideas behind them, as well as the characteristics of the times and the

inherent connection between contemporary works<sup>[2]</sup>. After the above investigation and research, whether it is fun or game-like font design, it can better enable the audience to interact with the design. Therefore, the author combines the two characteristics to complete this experimental font. After experimenting with paper, rubber, leaves and other materials for experimental design, considering the gameplay and interactivity of my own design, I finally chose paper for experimental font design. There are three reasons for choosing paper for the experimental font: Firstly, paper can be folded to show the effect of layering, which can effectively improve the subsequent fun and degree of freedom, and can also increase the interaction between the design and the user. Secondly, the use of paper folding can achieve the visual effect of building blocks. Thirdly, the variability of paper and its versatility in carrying and transmitting information could be used to carry out design through dot matrix.

## 2.2 Meaning in Topic Selection

In the experimental fonts, setting the theme of "interactivity and gameplay" is to be innovative in the exploration of font design and fully enable the experiencers to feel free and unrestricted. The interoperability can stimulate the curiosity of the audience and can be better integrated into the design. The author hopes that through interactive experimental fonts, people's interest in font design can be increased, stimulate every audience's thoughts and ideas, and better design transformations and creativity can be obtained.

## 3 Interactive Chinese Character Game Font Design Process and Method

Decoration is more important in experimental fonts. In font design, whether it is frame line, broken pen, incompleteness, narrative space, fold band, single stroke, or three-dimensional, etc., are all decorative features. The experimental fonts in this paper adopt dot matrix method to design Chinese characters. "Interesting, interactive, and gameplay" will be one of the main directions of the font design this time. Through the processing of the font "shape", it can be transformed into different fonts at will, and it is precisely because of the different transformations and degree of freedom provided by paper folding that allows users to interact with the fonts in any way they want and express their feeling at will.

## 3.1 Design Process of Interactive Chinese Character Game

In the field of font design, the design of writing tools, software technology, grid technology, comprehensive materials, and hand-made, etc. is also an indispensable part of the experimental font design. In this article, we will introduce interactive game font design from materials and handwork, tools and writing.

### 3.1.1 The Research Methods in Font Design

First, through the literature research method: in literature research and review, it was found that interactive Chinese character games can not only train the ability of quick hands, but also make new learning experience in the process of interaction. Second, the case study method. For example, in the fun herbal experimental font design, plant specimens are used for sketching, and plant patterns are refined for design. Lastly, design practice. Combine case study to try your own experimental font goals and design results you want to express.

### 3.1.2 The Expression of Text on Graphics

Chinese characters are often called "square characters". The structure of Chinese characters is composed of different strokes in different shapes. "Graphicization" is more common in font design. Designers can form new designs through the reorganization of drawings, graphics or Chinese character strokes. In this design, a dot matrix method will be used for graphic design, and new fonts can be composed of "live" elements or strokes, which can better show graphics and visual effects.

### 3.1.3 Breaking and Reshaping of Strokes in Chinese Character Games

The combination of Chinese characters and the decomposable layout space can be well developed for learners. For example, the Chinese character "木(mu)", two "木" can be combined into the character "林(lin)", which can be disassembled into "人(ren)" and "木". Both the space and layout of Chinese characters can make learners better remember. Similarly, before designing an interactive Chinese character game, you must first determine the position and shape of each point or each square to ensure that you can compose better new fonts and visual effects while changing or flipping at will. At the same time, refer to the use of dot matrix characters



when designing interactive Chinese character games and then present it through the medium of paper. Carry out creative graphic design based on different squares, and obtain designs and combinations through different positions, sizes, and shapes of color blocks. In the experimental font method, we use self-breakthroughs, the courage to explore and research, the courage to innovate and imagine, and try unknown phenomena to obtain unknown visual effects.

In the design of Chinese character games, the placement and processing of each color block, the depth and angle of the color block are used to enable users to "follow the heart" in achieving different empathy and visual effects.



Figure 3. Paper Photograph

### 3.1.4 The Design and Application of Materials

There are more and more design techniques and innovations in font design, and the development of modern technology in experimental font design brings more possibilities to experimental fonts. In today's technological era, most designers combine advanced technology to design experimental fonts, combining materials and special techniques. In this era of multiple media, more and more people ignore paper media. In the interactive Chinese character game design, A4 size gold dot paper, marker pens, scissors, glue, carving knife and black display boards will be used. During the design process, the paper is folded into square shape (as shown in Figure

3), and three small squares will appear in each folded square. Cut out on the folded gold dot paper according to the direction in which the small square will be turned. Cut to get new fonts in the process of flipping each other. The process of turning over is also an interactive process, in which new knowledge and recognition of Chinese characters can be gained. Working in this process is also a way for everyone to express their inner thoughts. In this design, our graphics will be drawn in the form of color blocks. During the flipping process, the design has a feeling of game setting. Through the color block dot matrix, you can browse through different fonts and present different effects.

### 3.2 Graphic Design in Font Design

The overall structure and layout of Chinese characters are the core of this interactive Chinese character game. After folding with gold dot paper, arrange and calculate according to the characteristics of dot matrix characters, and then cut them with scissors or art knife according to the direction of the flipping method. Combine fonts by flipping at will, deduce the strokes of the fonts into circles, squares, and triangles through the layout of Chinese characters for general design, use dots to design graphics, and fully display the relationship between the dots, the lines and the planes of the design in the plane space, and then paint on the square paper module (as shown in Figure 4) through the different ways of browsing and flipping the paper. After the color blocks are processed, the golden dot paper folding board is made to show the as many Chinese characters as possible that the users want to see. For example, we found students browsing at will in the experiment, and when the reading is unsuccessful, we will modify the color blocks on the experimental board. Therefore, a continuous interaction in interactive Chinese character games can bring out the curiosity of the users or enable them to find ways to better learn Chinese characters. After the design, the interactive users are asked to read and experiment with the Chinese character games. In practice, we read "Fuzhou University" and other fonts respectively (Figure 5).



**Figure 4.** Snapshots of Chinese Character Game Design



**Figure 5.** Interactive puzzles

Interactive Chinese character games have aroused people's interest in Chinese character learning. "Interaction" is a sociological term that refers to the way people send, disseminate and feedback various information in real-time in an information exchange system. Audiences and readers can not only receive

information from the media and react to them, but they can also provide immediate feedback<sup>[3]</sup>. The participation and freedom of interaction in the experimental Chinese character game fonts is used to carry out design.

## 4 Conclusion

In the current era, in the face of the development of the big data era, new designs and new methods are being used in design to meet the design concepts of the new era. Therefore, we must continue to experiment and explore in the design work.

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