Research on the Reading Application of Intelligent TV

Fan Jie¹, Xie Xin²
1. Beijing Union University, Beijing, China
2. The Second Hospital of Jilin University, Jilin Province, China.

Abstract: With the development of China's economy, the general improvement of population quality, people pay more and more attention on the concept of sustainable development of family education, in which two-way parenting theory is more suitable for modern social requirements. Two-way rearing ignores the fragmentation of knowledge, providing a systematic way of parenting, echoing ideas, principles and methods. The construction of the TV bookstore is a new educational bookstore that all family members are based on the love of the two-way parenting. This paper mainly discusses the application model of interactive design of electronic reading on TV. First of all, the use of artistic electronic reading of television reading applications to the theme of tea culture to build the future interactive reading robot virtual chat situation, for example, creating a new sense of immersion in the interior environment, to promote the sustainable development of information resources to the environment of low-carbon life philosophy. Here TV reading can allow more families to have their own home library, in the future we can stay at home to visit the Digital World Expo, or the Digital Museum. Family-style reading will enter to a new era. More families with high quality parenting education can enter to the era of interactive primary school education through this platform.

Keywords: TV bookstore; smart TV; interactive design

Introduction

E-bookstore mainly in the book content providers in the role of the consumer's vision. Compared to the traditional paper books, its advantage is low cost, massive storage, convenient search positioning, personalized service, low carbon environmental protection and a variety of services. In general, operators in addition to the need to provide a large amount of reading data, to provide a perfect terminal reading application is also very important.

For example, in the smart TV, open the electronic version of tea culture book in the Tibetan butter tea part, contemporary Tibetan tea culture lovers, you can in the virtual sweet tea house while enjoying the scenery of Tibet, while tea chat.

The traditional e-bookstore to the home computer for reading the terminal. Due to the powerful computing performance of home computers, as well as network transmission capabilities, this reading can provide a better reading experience. In addition, there are a large number of mobile reading applications, they use mobile terminals to provide
reading applications, such as the Amazon Kindle Tablet PC, Hanwang ebooks, cloud bookstores and so on. Because this mobile terminal performance is worse than the home computer, the network speed is not good for home computers, the screen is relatively small, although in this way you can read anytime and anywhere, but the user's interactive reading experience slightly worse.

With the development of technology, home appliances have also been more and more intelligent, television was given with high hopes, so the smart TV was born. The so-called smart TV, that is, like a smart phone, it can be installed by a computer operating system and can be installed by the user and uninstall third-party for any software. As a smart TV first it must be a TV, or have a TV function, followed by it also has the characteristics that the current TV does not have: intelligent, more like a good interactive performance smart chatty robot.

Due to the big screen of the high-definition TV, it is suitable for some media playback, reading, games and other advanced features. At present, smart TV has not really popular, in the lack of a large number of smart TV similar to the performance and higher than the mobile side of the interactive application of the system or software products. However, "High Mountain does not prevent the white clouds fly, bamboo does not interfere with the flow of water too". TV reading must be the most practical direction for a home reading activity. As for e-reading, the current competition in the PC and mobile devices has been intense, businesses need to find a breakthrough to expand this business, to achieve "demand for customization" and "color TV entertainment". The most important thing in Smart TV is to build a fully open platform, to find a new field of development, and constantly achieve the content of the program innovation, so that home users to actively participate in activities to experience and "reading is happy", "art education is sweet "and so on.

1 Study the design of TV reading content

Just as the Flamenco dance composed of three elements of the song, dance and guitar (balie flamenco, cante flamencom, toque flamencom), which can both exercised the body and delighted the mind. For example, on the basis of understanding the user behavior and interest model, the use of smart TV to develop a module - tea culture virtual chat situation, so that people who can understand the tea ceremony can chat and play games, while in interested topics or programs, people can give a good call or shouting, have the feeling of life in person. For example, it is the fragrance of tea, the heat of boiling water, the temperature of the teapot, and the meditation of the artwork. Or enjoy the online purchase of blanket artwork, online tea under the process of enjoying the feeling of green, in the blanket on the water directly grow green plant, and so on.

The Application of Expanding Interactive Design in TV Reading. For example: in the teaching project training to guide students to draw tea behavior process, the establishment of a virtual tea culture teahouse. From the process design to start, so that tea friends immersive experience of China's tea culture. You can first guide the tea friends in the virtual teahouse before walking in a modern virtual tea theme street (see Figure 1). There are some props in the tea theme street (see Figure 2) is better. When you go to the teahouse door, there will be greetings to drink tea for guests’ scene. At the entrance of the teahouse, a lovely teahouse waiter waits there (see figure 3). Into the teahouse, according to the color selection of different themes of the tea room, such as: Taihu Lake smoked tea room, Suzhou fragrance tea room, Hunan ginger tea room, Shushan Chau Jun tea room, Taiwan's cold tea room, Hangzhou Longjing tea room, Fujian oolong tea room and so on. Different tea rooms were used in different colors of the waterfall to show the water, each tea room are digital architectural art. For example, in the digital Beijing courtyard building tasting Zhang Yiyuan jasmine tea. Tea
friends choose tea room, into the tea house. Starting from the waiter on the tea (see Figure 4). Virtual teahouse's graphical user interface can be developed from two-dimensional visual sense to three-dimensional visual perception. From the visual perception level, the virtual teahouse introduces virtual reality technology. One of the three-dimensional modeling and three-dimensional art effects and multi-channel interactive technology organic combination, allowing users to experience the effect of a great improvement. Through voice recognition, so that the virtual three-dimensional role to hear the real reality of the language, and then virtual three-dimensional role to make the appropriate action (including voice response, expression, etc.) (see Figure 5). These actions may be the behavior of tea, it may be the process of handing tea and so on. Through the touch sensor, action sensor, line of sight tracking, so that the three-dimensional situation of the water ripple effect vivid (see Figure 6). May be the cup of tea brewing process, it may be touching a cup of tea process. Just as digital car refueling (see Figure 7). Friends of tea users can also combine the existing virtual technology, operation of virtual robot hand, tea and tea in the completion of the action.

2 TV bookstore vision

In addition to the TV bookstore reading content innovation, but also need from the TV bookstore as the product itself for a new design. Should use smart TV terminals and TV operating entities, to develop TV bookstore.

The traditional e-book city to achieve the model, from the content flow to the point of view, its operating structure is as follows:
In this mode, the content flows from the downstream to the upper layer. That is, from the publishing house to the operating entity, to the end user.

But from the user's perception point of view, the system is often only occupy the last part of the flow of content.

The technology is broadly as follows:

Due to the existence of a large number of pirated software in the PC and mobile devices, as well as the crack program, there is a lot of content being stolen and illegally reprinted in the last part of the content. How to solve the content is copied, illegal reprint and other issues, but also e-book operators face a big problem.

In the Chinese reading site starting point, the daily update of the novel chapter, every 15 minutes after the piracy link can be appeared. This poses a big problem for intellectual property protection.

In the imagination, TV bookstore and e-book the contents of the flow of roughly the same. But its operating system may have some differences, the following is the envisaged reading system:
In fact, in the high-definition television system, the TV itself is only acting as a display device, its video decoding, playback control, on-demand system and other functions are concentrated in the set-top box. We can put the set-top box as an embedded computer, its internal also installed operating system and application software. Which Google TV, is based on the Android operating system.

Imagine: In the TV reading system, the reader can use the intelligent TV control equipment to select a book or magazine, selected process, set-top box to the TV operating background to send reading instructions, the background according to their authority and other information to decide whether to transmit. Once transmitted to the set-top box software, the software performs the decoding operation and displays it on the TV. For use with intelligent TV control equipment to flip or for other operations. For example, through the intelligent system to record the average speed of people looking at the page. And then in accordance with the needs of the reader, select the required number of pages, by setting the page stay time to set the speed of automatic page.

As the cable network is not as open as the Internet, within the cable television network, the content is illegally reproduced or spread is almost impossible. The set-top box itself is like a non-public "black box", so want to intercept the contents of the set-top box from the electronic reading to other networks is also more difficult. This is inadvertently protected the security of its content.

3 TV Bookstore Research Significance

Compared with the traditional bookstore, TV bookstores have many advantages.

1. Make full use of indoor space, creating a personalized indoor reading atmosphere.

As shown in Figure 8, the appearance of the TV bookstore visual sensory effects can be designed to resemble the same as the murals of the pastoral style. TV bookstores can help families build a unique home electronic bookcase. Do not have to buy the space of the physical bookcase, you can also customize the skin, regular replacement and decoration of their own style of the virtual bookcase. If you use the new 3d TV for TV reading, interface design can make people feel immersive, the user can experience the immersion of outdoor reading. This is conducive to physical and mental health. Especially the hanging of the TV, you can make people stand to read, enjoy the outdoor reading newspaper.
relaxed feeling. Most of the modern white-collar workers work, the human cervical spine has a lot of damage. And television reading can make people upright to read the neck, which largely solved the cervical disease.

Figure 8 Interface design effect

2. To create a new way of life experience, expanding the economic value of television.

Smart TV has the characteristics of human-computer interaction. Some people compare the interactive effects of smart TV with video on demand, but the real interactive value of TV is not limited to video content, but also can include reading, touching three-dimensional game interaction, smell the smell of interaction and so on. In fact, there are many value-added services to be developed.

As the smart TV by the program less and the quality is limited, slow update and other constraints, TV bookstore can become one of the transition period value-added services. For the future optional video multimedia play publicity market, inspire the audience, for the role of traditional TV users. TV bookstore will become one of the important ways of making smart TV.

3. Cultural quality to further improvement.

Personalized custom home bookcase can use TV bookstore system platform to reach millions of households, a TV bookstore. Ancient times, "too school set Yin door", today may be "culture into the million" grand occasion. For example, when watching TV shows, people can also interested in the terms, categories, etc., in a timely manner to consult or find information in the TV library, learning in the entertainment. By the "fast food culture", sometimes prompted to give up halfway to watch the TV series, and choose to open the computer to find the TV series of other plot introduction and final story. If you have a TV reading function, you can find the relevant information in the TV library. In the near future, there will be more parents who want to make family education a source of nourishing children's heart, and will quickly improve the quality of family education with the TV bookstore platform.

Conclusion

With the intensification of China's urbanization process, the application of smart TV reading is inseparable from the TV book system design. The current TV reading, has not only text and a small number of pictures to read, but can set text, images, interactive animation, audio, video as one of the virtual context of reading. The atmosphere of the
TV bookstore will be composed of a powerful virtual chat room class that reads a powerful human-computer interaction.

**Special thanks**

This article is for Beijing Municipal Education Commission Scientific Research Project: The digital experience and creative derivatives designing research of Beijing traditional courtyard architectural art(2017SM201711417005), Beijing Union University Teaching Reform Fund Project: based on the MOOCS teaching model, the teaching reform of the course WEB technology application development(No.JJ2016Y067), the training project development of interactive media module (No. JJ2015Y090). One of the phased results of the horizontal subject “Weight Analysis of the Main Factors Affect the Seepage Efficiency”. One of the results of Beijing young teachers social research project in 2017: “The Cultural and Creative Productions Designing and Utilization Model Research in Beijing Emerging Tourist Area”.

**Reference**