Multi Sensory Interactive Design of Public Oriented Information in Aging Society

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Abstract
In this paper, the authors study the user's perception of the public oriented information in the aging society. The design method of public oriented information for aging population is proposed. In this paper, we discuss the relevance of information and the method of interactive interpretation from the perspective of optimization and transfer of multi sensory design. Through the analysis of the design of the elderly, we try to improve the effectiveness of the public oriented information and realize the interactive communication between the information interpretation and the perceptual experience.

Key words: Aging, Guidance information, Sentimental, Interaction

1. INTRODUCTION
In the public environment, the guidance system is widely used in all aspects of society. As the medium of information dissemination, the first is to meet the basic needs of people living, working and traveling in the urban environment (Ding, 2013). Secondly, with the continuous expansion of the city scale, efficient, safe, convenient and orderly oriented design is very important for people to travel and improve the efficiency of social operation (Li, 2013). With the social problems Chinese aging intensifies, the increase in the amount of information and the process of city expansion, the guidance system will become more and more important role, and guide people's life, and improve the quality of life of the important factors (Xu, 2011). In the process of rapid urban development, it is very important to strengthen the study of urban public oriented information system and increase the care for the elderly. Based on the experience of the aging population, it is the direction of the future aging society to carry out the interactive design of the public oriented information.

2. MULTIMEDIA AND THE SOCIAL PUBLIC ORIENTED INFORMATION

2.1 Multimedia urban landscape
The role of digital multimedia technology in landscape architecture, landscape planning and design of production units, each unit in the process of city gardening work, much of the application of network information retrieval and query, publish, including landscape information program collection, network program evaluation (Su, 2013). In addition, the geographic information system (GIS) for landscape architecture professionals provides intuitive and rational spatial analysis tools, extract the various areas of the global information through GIS, a spatial database required in landscape assessment and planning, can extract the required data for each kind of landscape if statistical information, and edit output (Li, 2014). The landscape includes landscape planning and design and landscape real operation, practical work, usually need a large number of data and graph information to express the intention of landscape design, in the hope of not built before you can see the design effect, timely according to functional needs, artistic requirements, environmental conditions and other factors to modify relevant personnel put forward the proposal and the design scheme of decision making. In this way, it is a good solution to the previous drawings to modify the difficulties, the expression is not intuitive, but also left a lot of regret after the completion of the problem. In addition, the three-dimensional model can also be established to display the three-dimensional effect (Guo, 2013). The 3D model of landscape architecture is a kind of image and graphic expression, it should be combined with the global positioning system technology, geographic information system, the complex natural landscape pattern, through integration with Internet, Web, voice link and photos, browse and enjoy the various attractions multi-level comprehensive users dynamic and multi angle in the three-dimensional virtual landscape architecture, to feel personally on the scene.
The influence of digital multimedia technology on urban architectural design, in order to meet the increasing needs of the people, in the architectural design of digital multimedia technology has a higher requirement. In practical work, we need to combine the environmental problems and the rational use of space to form an environment for people to use, live and watch. Real estate vendors have begun to use three-dimensional graphics to display and promote the advantages of the project before the house began to build. In order to meet the needs of the times, many colleges and universities in the course of making up architectural design three-dimensional thinking education and 3D graphics, which shows that the community has been applied to the digital multimedia technology in this project expressed concern and support. For a long time, we can according to customer needs, the function of art needs, environmental conditions and other factors in this field, outlines the general design intent, then the digital production personnel according to the design intent, the two-dimensional graphic design of the CAD format, into the standard data file format to the 3D modeling software, 3D drawing on reasonable distribution for the environment and space, to determine the rationality of the design.

2.2 Design method for improving the safety of urban pedestrian street

After the analysis of the fall and fall of these two security issues, there is still a common security problem that is the collision. Now in some places, often can see for the blind building was occupied, causing the blind during the walk, it is easy to collide. Because of the development of city construction, the road continues, many road, in the construction environment is not in place in case it is prone to accidents. This also makes some of the physically unable to walk wheelchair patients, there is no space to walk.
In view of the above common security problems, the fundamental solution is to strengthen the urban pedestrian street landscape environment of the safety design, the main method of measures: The step or ramp of the walking street is put out of the anti-slip mark, and the construction of non-slip is strengthened: To pay attention to the construction of the slope of the ramp, for its non-slip facilities, to start from the end and the beginning. The construction should pay attention to the pavement, to prevent eye diseases and accidents due to personnel vision problems. To strengthen warnings to the facilities of the ramp ends, to remind people to slow down the attention of anti-skid, especially in the rainy day, but also increase the safety of red light slip font. In the construction of the pedestrian street blind specification: At present, the blind is any occupation phenomenon meet the eye everywhere, which leads to the disabled travel has become very convenient, lost security space. So, we should strengthen the focus on standardizing design work of the blind, blind design principle has three main points; the first is to protect the vision problems, there is a relatively safe walking space; second blind design is to reduce interference to the normal pedestrian mall; third and more people, to the appropriate the distance and the other road, and from the middle of the segmentation, the green belt or the green wall form, but also in the road outside the establishment of stone, to maintain its green belt or green walls and stone road and flat line. If the edge of the stone and uneven road, it will give a wheelchair disabled people travel inconvenience, for people with vision problems, but also provide a reminder. In real life, due to its proximity to the sidewalk curb tilt angle is larger, it is easy to make a person in a wheelchair through, cannot control its speed, so, in the construction of inclined curb this design, can choose to build a platform in the middle of the sidewalk, a slope at the end of any construction so, to solve the safety problems for wheelchair users good through the sidewalk.

3. INTERACTIVE DESIGN AND AGING POPULATION CHARACTERISTICS

3.1 Multi sensory design and multi sensory interaction

Perception is an individual's behavior, which has its own material properties, and the process of visual recognition is also the process of the recipient's own culture and identity. The information receiver receives, experiences and gets the result through the vision, completes the contact with the information source as well as
the resonance relations. Thus, the designer carefully designed to convey points and touch the user perception, is not a static plane, but the dynamic experience of the integrated process and a process with a significant feature of the results. This is to increase the perception of points, to extend the perception of the dimension, the use of multi sensory user awareness is the core of the design. How interactive is an extension of the perception of comprehensive design, the use of various techniques to fully design information, and at the same time by sight and touch and listen to the two senses of more comprehensive experience, interactive design and user information, the purpose is to let the user from the unfamiliar with the tension, natural tendency and rationality the process of perception, recognition of the value realization of psychology and physiology, in order to better achieve the design value. It will involve sensory, emotional, emotional factors of participants and knowledge, intelligence, rational thinking and other factors, and a content information (including text, color, sound or virtual perception) interaction (observation or participation) and the results.

3.1 Physiological and psychological characteristics of aging population

Second provisions of the law on the protection of the rights and interests of the elderly in China: "this Law refers to the elderly refers to citizens over the age of 60." After the aging of the human body in the physical structure of the organization has been aging, organ dysfunction and gradually reduce resistance, reduced activity. The main features can be summarized as follows. First, the degradation of perceptual function. With the growth of age, the aging population's visual, auditory, tactile, olfactory and other abilities decline. Second, reaction ability, action is weak, things to adapt to the extension of time. Due to the deterioration of the body function, the human muscles, bones and organs will be degraded, resulting in decreased ability to act. Third, due to the slow response of the body function will cause psychological changes. In the personality and emotions will produce the habit of adhering to the instinctive reaction, opinionated, not easy to accept new things, indulge in memories of the phenomenon. Fourth, lost the flexibility of thinking and rapid reaction in psychology, the subjective acceptance of new things slow, judgment, thinking, learning ability decreased.

4. DESIGN METHOD OF MULTI SENSORY INTERACTION BASED ON THE CHARACTERISTICS OF AGING

4.1 the conditions of the design of multi - information interaction

(1) a wide range of public oriented information, wide coverage of information. Here refers to the block, traffic guide signs, indicating information, the plane area indicator, but does not include the guidance of additional information printed matter. (2) in the background of aging of the design is the design method of the main means of re definition of information content and style, which can be adapt to the ageing population and accept, but should also be applicable to other age groups; (3) multi interactive study is to think from the aging population common point based on the information presented and the like. There are differences among individuals in the aging population.

4.2 Method for multi oriented interactive design of guiding information

(1). enhance the perception of multi sense points to achieve the relevance of the interaction between the guidance content and perception

Multi sensory optimization is a kind of cognitive awareness, which can be found in the way of information expression, information seeking and the characteristics of the information convergence. Because the guide display content and display message between have direct contact, so the media should be a known and associated objects or events, and these features can improve the aging of the population to guide information recognition .

For the aging population, the sensitivity of the system is decreased, and the information needs to be transmitted repeatedly or repeatedly. However, in the case of the same subjective conditions, the content of information is more simple, the interaction is easier to be perceived, the greater the intensity of information stimulation, the easier the interaction. For example, public space plane oriented maps is huge and complex and multi-level orientation, regional division, brand logo and other content is placed in a flat space, the elderly can not receive huge amounts of information content in a short time. The sketch of dismantling, respectively in accordance with the overall plan, the location information map of regional routes, hierarchical design non key information on weakening information for, will greatly help the elderly focus, reduce visual and psychological burden, quickly realize the content oriented times, multilayer and focus correctly. At the same time, on this basis, we can further strengthen the channel of information expression. In the automatic telescopic door or platform ground fast bus station door, marking station name obviously and bus travel direction, can help the aging population orientation in a noisy environment, can not only strengthen the close oriented information, but also can solve the crowd to remote viewing dynamic or static map as a result of decreased visual acuity can not watch the screen scroll text.
Secondly, the interaction is based on information sharing based on information, guide the establishment of multi-channel optimization is not only the quantity or the form change, should also be clever to establish convergence in the public oriented information and content oriented. For example, in the name of public awareness and public places, facilities, or choose, those who are familiar with the contents of the aging population. On the one hand, the orientation of information design should be consistent with the content of the guidance information. Now most of the subway exit to follow foreign English, select the four corners of the world with the initials W and E, S, N as the exit signs, this is not conducive to the no English background of elderly cognitive, not easy to aging population receiving rapidly in a short time, rapid response. On the other hand, we can make use of the typical known content for further information guidance design. To be familiar with the landmark of the aging population (government, hospitals, large public places) to the site name, with its well-known typical geographical names for another public place to do the direction of information description. That is, the integrated narrative description and the focus of the description of the description of the same way, to enhance the ability of the elderly to quickly capture the key elements of the perceptual ability, information interaction naturally also.

(2). enhance the perception of multiple dimensions of perception, to achieve the guidance of the content and the perception of the interactive interpretation

Transfer refers to the interpretation of the transfer and transfer of information by means of other means when the guidance information can not be completed through a certain channel. Multi sensory transfer is the use of a variety of information interpretation method to make up for the lack of acceptance of a single sensory information. For example, the phone interface icon design can achieve up to hundreds of text messages, but in any case, the change of the envelope on behalf of text messages, phone calls on behalf of the caller, IE on behalf of the web browser page. This kind of information interpretation is strengthened in the process of symbolic design, in order to consolidate the original meaning and arouse the user's perception.

One is the transfer from text information to traditional symbols. The aging population of the visual function changes, the most common phenomenon is the decline in focus adjustment ability of short distance, the same distance will not recognize the word, young people see the font, is not a short period of time that a lot of modern symbol. The graphic symbols which are clear and clear, and have universal common understanding, can enhance the visual perception and impact of the old people, and it is easy to capture and increase the chance of getting the information correctly. The arrow is a traditional guide sign, in addition to the meaning of forward and backward, but also has an alternative text to the direction of the indirect description of the function. The public signs which are closely related to the aging population, such as toilets, hospitals and so on, have the symbolic meaning of no need to explain. For the elderly, in the case of degraded sensory awareness of hesitation, symbol reading than text is more simple and convenient, especially for the traditional orientation symbol familiarity increased visual perception and psychological dependence, even become a potential alternative text inside information transfer.

Two is the transfer from static to dynamic. In an open environment, guiding system environment is very complicated, there are many factors influencing visual reception, guidance and environmental background information should be clear boundaries, the relationship clear, obvious contrast, static stability, enhance the concentration of the information content conveyed. Bus rapid transit stations were set up a static plane map, dynamic electronic display screen, rolling screen and the use of a variety of ways, such as the voice of the station and bus route instructions. The guide information display method to strengthen the centralized description of the same content to a certain extent, solve the aging population because of the decline of memory on the site name cannot keep the memories, and because of decreased vision information can not be obtained by auditory substitution and other problems. The two is a multi-level complex content oriented information system or new content cannot quickly be aging population receiving, display of information can take the traditional geographic graphics and photos combined, can also achieve orientation recognition using sculpture, landscape, and even from static to dynamic plan can touch system excessive, reduce information communication time, shorten the process and difficulty of information discrimination.

5. THE METHOD OF MULTI ORIENTED INTERACTION OF PUBLIC ORIENTED INFORMATION IN AGING SOCIETY AND ITS SIGNIFICANCE

(1) summary of the design methods of public oriented information multi sense interaction

There is no doubt that in the direction of a series of factors in the design of information, the correct communication is the first source of guidance, effective perception is the only criterion to measure the quality of communication. Multi sensory interaction design is to expand the information transmission and perception, flexible, fair and effective to pay attention to the perception of the aging population, from the design point of view to bring new ideas and strategies. The interactive design of physiological and psychological characteristics of aging population based, help to deal with the problem of the aging society, improve the usability of the guidance system, but also to enhance the city oriented information utilization rate to play a role in promoting.
The design methods are summarized as follows: (1) pay attention to the planning of design information. More and more serious problems in aging, pay attention to the difference of aging population needs, on the basis of the perception and experience of multi sense optimization, multi sense transfer, avoid the information loss caused by misunderstanding or misinterpretation, and easy to receive the elderly. (2) service in content. Put an end to the decorative design, from the initial design to pay attention to the text, graphics, symbols, colors, textures, sounds, visual information and other related grade design elements, the choice of methods, on the basis of the reality of problems brought by the aging of the population, with information to accept for the purpose of realizing oriented information useful and effective, so as to improve the information perception of aging the rate of population. (3) the design of guidance information should take into account the cognitive psychology and habits of the elderly, especially the psychological impact on behavior. It is an effective way to realize the interaction between the modern design and the aging population by making up the inadaptability caused by the change of the design method and the expression mode from the traditional form or culture.

(2) based on the characteristics of aging, the sense of public oriented information

The public oriented information system related to travel and life in different age groups and different gender groups, especially in the face of Chinese aging society, guide reasonable information system to facilitate the elderly, help them overcome the physiological and psychological barriers, enhance the implementation of the guidance system to design means. The aging characteristics of the guidance system of interactive design is to the aging experience as the starting point based on the survey of relevant information, improve the efficiency of application oriented information, in order to achieve high efficiency of information oriented city. The multi sensory interaction design of the guidance system should be able to reasonably plan and make use of various design elements, which will bring substantial and spiritual experience to different people. In the design of the initial emphasis on the typical characteristics of the aging population, to avoid the blind design of the silent value.

The implementation of information oriented design design is not only a means to enhance the degree of cooperation depends on the social cognition and city planning, the overall environment, but also rely on the common improvement to around a variety of software and hardware facilities, services, and various supporting measures, the implementation of the system. The implementation of multi sensory interactive design must be based on the perspective of urban planning, urban management and design standards. Only from the macro point of view to enhance the concept of multi oriented information design concept, in order to truly achieve the results of interactive information oriented. At the same time, multi sensory interaction design is a relative concept, which needs to be classified according to the development of different cities. The psychological and physiological characteristics of the aging population, the measurement of behavioral data, and the types and methods of social activities are also changing according to the time. All of these have a profound impact on the aging society oriented information design methods and interactive ways, but also the direction of future research. In the context of the aging society, the research on the interactive design of the guiding information is inevitable, and it is also the change of the information oriented design in the development of the big data and interactive design. Only in this way can we truly guide the aging population to enjoy the convenience of design, to achieve the communication between people and design, and ultimately contribute to the development of the public environment in the process of urbanization.

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