The construction of design methods for the socialization of red culture empowered by digital interaction

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Abstract: The socialization of red culture emphasizes the inward dissemination effect of culture, stressing the further stimulation of the public's emotional resonance on the basis of cognitive recognition, enabling them to internalize red culture as their own spirit and guide their future behavioral practices. At present, the dissemination of red culture in our country urgently needs to transform towards socialization. This article, from the perspective of design studies, explores the advantages of digital interaction design in empowering the socialization of red culture. Then, based on the demand model, it constructs a set of digital interaction design methodologies for red culture to guide subsequent design practices. By improving the quality of content, it promotes the efficiency of dissemination, accelerates the socialization of red culture, and contributes to China's cultural confidence and strength.

Introduction

Red culture is an important component of China's fine traditional culture and also a significant resource for the construction of social ideology and the cultivation of national moral culture. However, with the advent of the all-media era, the explosive growth of information has led to the diversity and change of people's ideas and concepts, and values have been surging and colliding on the Internet. Moreover, with the development of digital technology, the storage of red cultural memories no longer relies on the human brain but is carried along by digital carriers such as search engines and cloud storage, leading to the gradual dissolution of social red memories under the instrumental rationalism of technology supremacy [1]. In the face of the above situation, with an eye on the strategic height of socialist cultural construction and the great rejuvenation of the Chinese nation under the new pattern of national construction at the 20th National Congress, the current dissemination of red culture should focus on "injecting public emotions, winning public recognition, enabling a positive interaction and communication between the sender and the receiver, and effectively internalizing red culture as the conscious pursuit and ideals and beliefs of the audience" [Zhang Li et al. Red Gene: Changes in Inheritance Mechanism and Contemporary Construction, Beijing: People's Publishing House, 2020, p. 205. For deeper purposes, it is urgently necessary to transform from top-down, one-dimensional and flat mass communication to socialized communication. In this process, design studies should take on the responsibility of promoting a qualitative change in communication content. With the vivid expression of culture as the foundation and the strengthening and continuation of faith as the goal, through creative digital interaction design, red culture can more easily reach the emotional level of users and trigger deeper thinking among the public in the interaction.

A New Ecosystem for the Socialized Dissemination of Red Culture

1.The socialization of red culture

The term "socialization" originally mostly appeared in the research of disciplines such as psychology and sociology. In a narrow sense, socialization research mostly focuses on teenagers and children, with the research emphasis placed on the process of a person's transformation from a "biological person" to a "social person". In the 1960s, the proposal of the structural functionalism sociological theory represented by the American sociologist T. Parsons directly promoted and facilitated the research on broad socialization. In a broad sense, "socialization" refers to the process in which individuals, in their interaction with the social and cultural environment, actively learn and master various knowledge and skills, form personal personality, behavioral traits and value standards, and play their social roles. Since then, the application scenarios and disciplines of the term "socialization" have been expanded, and the concept of "cultural socialization" has emerged.

Cultural socialization refers to the process of the continuous inheritance of culture and the

internalization of the value standards it contains into people. It can promote the continuous transmission and continuation of fine social traditions, and thereby form relatively unified social value standards within a certain social scope, which is of vital importance for the stable, harmonious and long-term development of a nation and a country. In the field of socialization of ethnic culture, Yin Keli [2] et al. proposed that cultural socialization is the core of ethnic socialization and can promote teenagers' identification with their own ethnic culture. In the field of research on the socialization of party culture, Li Mengyun [3] et al. proposed that the socialization of the Party culture of the Communist Party of China is a process in which the Party publicizes its political beliefs, values, and political tendencies to the general public and is recognized and accepted by them. Wang Yanfei [4] holds that the socialization of party culture refers to the process in which the culture is disseminated and recognized by social members. It can be seen from this that the key to cultural socialization lies in two aspects: cultural dissemination and spiritual identification and internalization.

The socialization of red culture is a relatively new research perspective and has not yet formed a unified and clear concept in the academic circle. After consulting journal literature, it was found that Xu Gongxian [5][6][7] and others, starting from the fields of ideological and political education and cultural governance, conducted in-depth research from multiple perspectives such as the theoretical basis, practical problems, communication purposes, principles to follow, and realization methods of the socialization of red culture. It is believed that the socialization of red culture is an inevitable requirement for the development law of red culture itself and the construction of a culturally strong country, and it is proposed that the primary purpose of the socialization of red culture is to enhance the public's recognition of the value of red culture.

Based on the above, the socialization of red culture can be understood as: Through the research and diversified dissemination of red culture by all sectors of society, we aim to promote the modernization and popularization of red culture, striving to have the spiritual connotations, values and other contents contained in red culture widely recognized by social members and evoke emotional resonance with them, and then internalize them as the people's self-spirit and use it to guide their own words and deeds. Compared with mass dissemination, the socialized dissemination of red culture pays more attention to enhancing the internal communication effect of each audience. To achieve this goal, the support of digital media and technology is indispensable. Digital interaction design can fully leverage the immersion, interactivity and interest of digital media. By organically integrating with new technologies such as the metaverse, virtual reality and digital twins, it can reconstruct the output end of red culture in terms of content, form and dissemination mode, and endow red culture with new life.

2. Analysis of the Advantages of Digital Interaction Design in Empowering the Socialization of Red Culture

2.1 Address the root cause: Cater to the needs of the audience

Throughout the long history of design development, design paradigms have undergone earth-shattering shifts. Early designs were not intended to better serve their users, but rather to represent the designer's own subjective spiritual world and cultural space, that is, "The designer constructs himself by writing himself, with the aim of providing a discourse framework for his or her own activities and legitimizing them." [Guy Giulier, The Culture of Design, translated by Qian Fenggen, Beijing: Yilin Press, 2015, p. 32.] Since the 1970s, with the gradual rise of concepts such as "participatory design" and "people-oriented", the design ecosystem has begun to transform. In 1986, Donald Norman's publication of "User-Centered System Design: A New Perspective on Human-Computer Interaction" brought the concept of User-centered design (UCD) into the public eye completely. Digital interaction design adheres to the design philosophy of UCD, emphasizing the integration of user needs throughout the entire product cycle. It provides sufficient practical basis for design through methods such as user research and usability testing. The socialization of China's red culture is aimed at the entire society, featuring cross-age, cross-occupation, and cross-health status. Different audience groups have different concerns and interests. The past "casting a wide net" style of dissemination has not achieved good results. Digital interaction design can, through the user research stage, comprehensively adopt various qualitative and quantitative research methods such as observation, questionnaire analysis, and interviews to deeply understand the cognitive levels and behavioral characteristics of different audience groups. Then, it can prescribe the right medicine and design targeted content for the dissemination of red culture, thereby enhancing the audience's acceptance of red culture.

2.2 Correct cognition: Compensate for embodied disabilities

Cognition is a psychological activity, referring to the objective process by which the subject receives, understands and remembers information. On this basis, a certain subjective attitude and emotional response are formed towards the information, and then the value judgment process of choosing to accept and recognize

the information is called "identification". From this, it can be concluded that cognition is the starting point and foundation of identification. That is, a high-quality understanding of red culture is a prerequisite for generating emotional identification and resonance with it, and then internalizing it as one's own spirit. In his book "Embodied Cognitive Theory: Cognitive Science and Human Experience", embodied cognitive theory expert Varela proposed that "cognition depends on different kinds of experiences resulting from bodies with various motor abilities" [F. Varela et al., translated by Li Hengwei et al. : Embodied Cognitive Theory: Cognitive Science and Human Experience, Hangzhou Zhejiang University Press, 2010, p. 139. This theory emphasizes that cognition is the cognition of the body, and the results of cognition are largely related to the physical properties of the body and its interaction with the external environment. In the process of content dissemination for the socialization of red culture, physical obstacles that may hinder the audience's cognition may include: sensory and intellectual impairments of the disabled, visual and auditory impairments and memory decline of the elderly, and weak text recognition and attention of young children, etc. Environmental obstacles include the relatively low educational level of some people, etc. For the former, digital interaction design can be compensated for through multi-channel sensory experiences, special interactions suitable for the elderly, and interesting interactive games. As for the latter, it is necessary to fully leverage the integration function of digital media for various media forms, using dynamic visual images such as pictures and videos to replace obscure and professional textual explanations. This can lower the content threshold, complete the popularization transformation of red culture, and reduce the cognitive cost for the audience. By compensating for the physical and mental disabilities of the audience, their cognitive biases towards red culture can be corrected, their ability to identify false content can be enhanced, and the cognitive level and personal quality of the UGC dissemination subjects of red culture can be indirectly improved, thereby reducing the noise for the socialized dissemination of red culture from the source end.

2.3 Stimulate interest: Innovate content and form

In the past era of popularized red culture dissemination, the phenomenon of homogenization of dissemination content was serious. Moreover, due to the large-scale application of algorithmic content recommendation mechanisms, the information cocoon became increasingly severe, leading the audience to be long-term addicted to the pseudo-environment constructed by algorithms for them. The information they could access became increasingly solidified and closed, and "information islands" were formed among audience groups with different content preferences. Just

as Marcuse mentioned in "The One-dimensional Man", "Contemporary industrial society..." This society has become a one-dimensional one, and the people living in it have become one-dimensional individuals. Such people have lost their freedom and creativity. Not only do they no longer have the ability to pursue, but they also no longer have the ability to imagine another kind of life different from real life. [Herbert Marcuse, USA, translated by Liu Ji: One-dimensional Man: A Study of Ideology in Advanced Industrial Societies, Shanghai: Shanghai Translation Publishing House, 2014, p. 218.] It can be seen from this that the lack of innovation is a major problem that urgently needs to be solved in the current socialization of red culture.

Digital interaction design has broken the model where the communication subject unidirectionally outputs and conveys content to the audience. With its vividness, immersion and interest, it has greatly broadened the presentation forms of red cultural content, evolving from single text, images and videos to a series of interactive media forms including games, VR, AR, interactive videos and body-sensing devices. This, in turn, provides more possibilities for the presentation of red cultural content. For instance, by taking advantage of the feature of being dynamic, digital interaction design can vividly reproduce the red cultural history in books, achieving the activation, dynamism and three-dimensionality of the scenes [8]. It can even create opportunities for the audience to directly "converse" with historical figures, allowing them to understand the images of great men that are different from those in textbooks and classrooms through interaction, making the red cultural history more vivid and down-to-earth. In response to its immersive characteristics, digital interaction design can provide audiences with an immersive experience that transcens time and space through simulated scenario construction and mimicmetic interaction methods. For instance, audiences can use VR devices to roam in a highly restored three-dimensional virtual environment, experiencing the integration of multiple sensory channels such as vision and hearing, and freely interacting with people and objects within the scenario, such as opening doors, flipping through books, asking for directions, and so on. Fully immerse oneself in the scene to achieve a deep emotional interaction between the audience and the red culture. In terms of fun, digital interaction design can organically combine the entertainment of games with the seriousness of red culture. By designing appropriate gameplay against the historical and story background of red culture, it enables the audience to deepen their understanding and recognition of red culture imperceptibly during the game process, and generate emotional resonance with red culture in this flow experience. It can be seen from this that digital interaction design can greatly stimulate

the innovation of the content and form of red culture dissemination. By creating more novel experiences, it can cultivate the audience's interest in red culture, enhance its social recognition, and contribute to the socialization of red culture.

2.4 Deepen understanding: Create empathetic communication

Empathy is a psychological concept, also translated as "empathy", referring to an individual's ability to accurately understand others' emotions and make accurate emotional responses in specific situations. Empathetic communication can be defined as the behavioral process in which an individual participates in information reception, infection, expression, and transmission and sharing when facing an individual or a group's emotional situation [9]. In "The Crowd", it is mentioned: "Although people vary greatly in intelligence, their instincts and emotions are extremely similar. Especially in near-pure emotional expressions such as beliefs, political views, moral evaluations, and personal likes and dislikes, most people almost hold exactly the same emotional instincts." [Gustave Le Pen, The Crowd: A Study of Group Psychology, translated by LAN Xiang, Beijing: China Water & Power Press, 2020, p. 24.] It can be seen from this that the realization of social identity with red culture should focus on the emotional depth and appeal of the content being disseminated.

Digital interaction design can be combined with narrative techniques to vividly and naturally integrate red historical stories into the content of communication. For instance, in RPG games that take red historical events as the main thread, the audience can participate in the development of red history through role-playing, thereby establishing an interactive connection between the audience and red culture. In addition, digital interaction design can achieve personalized customization, giving the audience the opportunity to decide the content or plot direction based on their own interests and preferences, thereby establishing a closer and unique emotional connection between the audience and the content of red culture dissemination, enhancing their participation in the dissemination of red culture, and further deepening the audience's understanding and internalization of the spirit of red culture.

Digital interaction design requirement model for red culture

The American psychologist Abraham Maslow (A.H.) proposed the hierarchy of needs theory from the perspective of human motivation. He classified human needs into physiological needs, safety needs, social needs, esteem needs, and self-actualization needs. He also believed that the main driving principle of his organization is that "basic needs should be prioritized or based on the size of their dominant role." Arranged from low to high in different levels. In healthy individuals, lower-priority needs arise when higher-priority needs are met. [Abraham Maslow, Motivation and Personality, Nanchang: Jiangxi Fine Arts Publishing House, 2021, p. 82.] . This principle can be understood as that before the audience develops emotional needs for a product or content, their physiological and safety needs must be prioritized for satisfaction. From this, it can be known that in order to awaken the public's emotional resonance and realize the socialization of red culture through digital interaction design, according to the hierarchical order in Maslow's hierarchy of needs, it is necessary to first ensure that the designed product can meet the basic usage needs of users to the greatest extent, and then pay attention to the needs of content communication and emotional experience.

1. Basic usage requirements

1.1 Physiological needs

Basic feeling. When designing a product that meets users' physiological needs, it is first necessary to take into account various physiological indicators of users, and to conform to users' requirements as much as possible within the scale and movement range of each organ in the human body [10]. Barrier-free design is a design concept centered on people with disabilities such as the elderly, the weak, the sick, the disabled, pregnant women and the injured. By studying their behaviors and thoughts, it helps eliminate the design deficiencies that make them feel confused and difficult, thereby enhancing the user experience. The digital dissemination of red culture in the new era of the 20th National Congress of the Communist Party of China is aimed at the entire population, including the elderly, children, the disabled and other groups with special physiological conditions. For these users, the concept of barrier-free design should be adhered to, and digital media and design should be used to help them overcome physiological barriers, enabling them to use the products smoothly and naturally like ordinary people.

Basic uses. The most fundamental goal of a product should be to meet users' physiological needs such as clothing, food, housing, transportation and entertainment, solve life problems, and make the product useful and even indispensable to users. After meeting the basic usage requirements, endow it with the connotation of red culture, making the product an indirect carrier rather than a complete tool for the dissemination of red culture, becoming a "vassal" that fully relies on the dissemination of red culture for its own vitality. In the early stage of product design, it is necessary to accurately control the product positioning at the strategic level. Only by meeting users' usage needs and solving their life problems can the product truly enter users' daily lives and then pursue resonance

at the emotional and spiritual value levels.

1.2 Security requirements

The usage method is safe. Security stems from familiarity. When users have a sufficient understanding of the usage methods of interaction, they will develop a certain ability to control the product as a whole. This ability enables them to proactively avoid risks and unexpected situations, thereby ensuring the safety of their use of the product. For innovative products like red culture interaction design, it is crucial to enable users to quickly understand the usage methods, that is, to minimize the learning cost of new products for users as much as possible.

Position sense safety. When a user uses a product, he needs to form a concept of the entire system architecture in his mind and always be clear about his position in the system. This is also one of the reasons why the vast majority of digital products on the current market have navigation. If users' location security needs are not met, it will lead to their subsequent operations being random, inefficient and unpredictable.

Decision security. When users are faced with relatively important decisions while using the product, the system should establish an error prevention mechanism for users to ensure the security of their decisions. When a user clicks to exit or submit information, a reconfirmation measure should be taken to prevent errors caused by accidental touches.

2. Content communication requirements

2.1 Visual aesthetics requirements

Vision, as one of the most acute human senses, plays a major role in information reception and serves as a direct intermediary bridge between users and designed products. Visual impressions have the characteristics of being intuitive and impactful. Good visual design can enable users to form a favorable first impression of the product, and then generate the willingness to continue interacting with it. At present, some digital design products of red culture only emphasize the spiritual connotations they carry in a limited way, while neglecting the external visual aesthetics. Although this type of product has high cultural value, its visual and aesthetic experience is poor, making it difficult to attract users' attention and interest, which is not conducive to wide dissemination. Therefore, based on the goal of "socialization" of red culture, the digital interaction design of red culture in the new era of the 20th National Congress must pay sufficient attention to users' demands for visual aesthetics.

2.2 The requirement for easy-to-understand content

Before users can develop an emotional resonance with red culture, they must first be able to accurately understand the red cultural information carried by the product. The previous text emphasized the importance of compensating for users' cognitive impairments at the physiological level and ensuring their smooth reception of information. At the content level, it is necessary to take into account the differences in comprehension among people with different educational levels and cultural backgrounds, ensuring that different user groups can accurately deconstruct and digest information on the basis of smooth reception.

Materialist dialectics holds that any real existence is a contradictory community containing identity and difference. The user demands of digital interaction design for red culture are also "diverse yet integrated", and the demands of various groups together constitute the mass demands. If we talk about "unity" without considering "diversity", it will lead to the dissemination of red culture having only breadth but lacking depth, and the communication effect on all groups will be superficial. However, if we talk about "diversity" without considering "oneness", communication will only have depth but no breadth, and it will be impossible to achieve the socialization of the entire population. Therefore, the "popularization" demands of the general public and the "differentiation" demands of various types of users coexist dialectically and have equal priority. Only by taking both into account can the demand for easy-to-understand content be truly met.

3. Emotional experience needs

3.1 Interactive immersion requirements

For content-based Internet products other than games, interaction is not the core content of the product but merely an auxiliary way to present the content. Therefore, the principle of simplicity is mostly followed to avoid overshadowing the main content. However, for the digital dissemination of red culture, content-based Internet products are not the main force. Experiential products like games and VR also account for a large proportion. For these products, interactive behavior is a very important part of user experience. Users should be brought into the set content context through creative and diverse interactive methods. Enable users to have a more immersive and realistic experience.

3.2 Social sharing needs

Human beings are socialized animals. A good product should satisfy users' desires for interpersonal communication and even the shaping of their self-image. The ultimate goal of interactive design for the socialization of red culture is to disseminate red culture of high quality and evoke public resonance. According to the AISAS (Attention - Interest - Search - Action - Share) model, it can be found that sharing on social platforms is also an important part of cultural dissemination. Therefore, whether starting from the needs of interaction design users or the needs of the socialization of red culture, it is required that the design should first be convenient for dissemination in form and ensure that the operation chain for users to share is not too long. Secondly, in terms of content, it should

conform to universal values, align with the emotional orientation of the general public, and establish a connection with users' real lives. It should be able to stimulate and mobilize users' desire to share independently, and after sharing, they should receive positive feedback, thereby encouraging them to continue spreading. Thirdly, the content to be disseminated should be easy to understand, ensuring that the audience for secondary dissemination will not misunderstand or be repulsed by red culture due to high content thresholds and obscurity, which could affect the dissemination effect of red culture. Therefore, in the era of the 20th National Congress, the digital interaction design of red culture should try to choose carrier forms that are convenient, lightweight and easy to forward, or have built-in quick sharing paths. At the same time, efforts should be made to create popular and contemporary red culture dissemination content. While meeting users' social and respect needs, it should enable red culture to spread from one person to ten and from ten to a hundred, expanding the scope of dissemination and improving the quality of dissemination.

3.3 The need for spiritual transformation

The prerequisite for the general public to internalize red culture as their own spirit is that its connotation has practical significance for daily life, the spiritual world and the construction of values. Red culture was born in the midst of war, and its historical background determined that its early content had distinct characteristics of The Times. In recent years, the media ecosystem has been rapidly restructured due to the rise of digital media. People "on the Internet..." We also exchange ideas and feelings. We will increasingly experience the wavering of ideological trends and sensory tendencies. [Frank Schlmarch, Germany, translated by Qiu Yuanwei: Internet to Death, Zhengzhou: Longmen Bookstore, 2011, p. 163.] . In such a communication field, the absence of red culture has exacerbated the influence and damage of historical nihilism in the "post-truth" era on the political sentiments of the general public, especially the youth. Therefore, digital interaction design should carry out creative and modern transformation and reconstruction of the connotation of red culture. On the basis of respecting its basic core, it should proactively adapt to the context of new media and the information acquisition habits of the general public, making its spirit closer to The Times, easier for the public to understand, identify with and empathize with, and play a guiding role in the construction of contemporary people's lives and values. Help internalize it into one's own spirit.

Innovative Design Methodology for Socialized Digital Interaction of Red Culture

1. Sensory interaction: Audio-visual design at the instinctive level

1.1 The visual interface is clear

Clear interface design at the visual interaction level refers to maximizing the readability of the interface and the quality of content transmission through reasonable information integration, element spacing, color matching and other means. For instance, when targeting the user group of young children, more graphics and pictures should be used instead of text. Strong colors with high brightness and saturation should be frequently employed. The amount of information carried on a single page should not be excessive. "common-sense" metaphorical designs should be avoided to make the content obvious, concise and easy to understand. For elderly users, page elements should be reasonably enlarged, sans-serif fonts should be adopted, color contrast should be enhanced, the number of colors within the interface should be reduced, and text descriptions should be provided for interactive components. From this, it can be seen that the specific meaning of the word "clear" varies among different user groups. However, in general, all designs that meet the needs of target users and can enhance their ability and efficiency to recognize the product interface can be called "clear" interface designs.

1.2 Key information is highlighted

Almost all types of product systems follow the "2-8" rule, which means that 20% of the key content determines 80% of the effect. Therefore, it is crucial to help users filter the interface content in advance so that they can easily notice and access this 20% of content. For the digital interaction design of red culture, the key information includes the key points of interaction behavior (such as operation prompts) and the key points of content expression (such as elements that can boost emotional resonance or promote the development of the plot). People are naturally sensitive to change. If elements remain in the same position and appearance for a long time, people often do not notice them directly. Once it starts to move or changes its appearance, it will quickly seize people's visual attention. The same is true for the auditory sense. Unchanging background music can make people "numb", unable to generate fluctuations in attention and emotions accordingly. Therefore, by designing dynamic effects (such as flashing or jumping) or special appearances (such as colors or styles distinct from other elements) for key content, and matching corresponding sound effects when necessary, the key information within the interface can be effectively highlighted. This is not about breaking the consistency principle that interaction design should follow, but rather about reducing the user's interface recognition cost through flexible adaptation and ingenious

application, and creating a more comfortable and convenient audio-visual experience for them.

1.3 Modernization of aesthetic style

Red culture is deeply rooted in history. For over a hundred years, red, as a color widely loved and valued in China, has long become the visual "spokesperson" for designs related to red culture. Up to now, many designs and products with the theme of red culture still mechanically use some traditional colors or graphic symbols, which leads to a disconnection from modern aesthetic styles. Over the past more than 70 years since the founding of the People's Republic of China, China's aesthetic concepts have undergone significant changes: the aesthetics in the first three decades of reform and opening up were more like "politicized" aesthetics, and the aesthetic concepts of the Chinese people were relatively closed. Since the reform and opening up, under the influence of the market economy, aesthetic culture has gradually transformed towards openness, personalization and diversification. With the change of technology, individuals' aesthetic experience has gradually enriched and their aesthetic ability has continuously developed. Therefore, it is also required that traditional culture and art transform into modern popular aesthetic models [11]. Therefore, the interactive design of red culture should promptly update its visual style, absorb the current artistic trends, and deconstruct, analyze and re-create popular design trends such as 2.5/3D modeling, high-saturation and strong contrast color matching, and comic hand-drawn style in combination with its own characteristics, so as to keep red culture up-to-date.

2. Action Interaction: Participation design at the behavior level

2.1 The interactive system of Yi Learning

The digital interaction design of red culture targets a wide range of people, and their abilities to use product interaction systems vary. The learning cost of complex interaction systems is relatively high. To eliminate the obstacles on the way to generating emotional resonance with red culture, the operation and interaction design of the product should be as simple and convenient as possible, easy to learn and master, and the most important principle is to reduce users' thinking. This effect can be achieved from the following perspectives:

The status is visible. In the "Ten Usability Principles" published by Dr. Nielsen, a doctor of Human-computer interaction, the principle of state visibility ranks first. It means that the system should always keep users informed of what is happening within a reasonable time through appropriate feedback.

Reduce the user's memory burden. Because during the process of using digital products, a vast amount of information fills users' brains, making it difficult for them to maintain long-term memory and to remember what they have seen before. However, most of the time,

users need to make corresponding decisions based on this information. Therefore, designers should help users reduce their memory burden by optimizing interface elements and simplifying the operation process.

The principle of consistency in habits. Digital products have been around for many years. Whether it is mobile apps, office software, web pages and other products, they have all formed their basic interaction logics and paradigms. Therefore, users have accumulated and formed a habitual understanding of interaction methods over time during the usage process. This requires that when designing, it is necessary to carefully innovate based on the existing user habits The existing logic of users' use of the product must not be violated; otherwise, the ease of learning and usage efficiency of the product will be greatly reduced.

2.2 Mimicry interactive operations

"Mimicry" refers to the design principle of obtaining clues from the physical world [Yang Dongrun, Meng Xiang, Li Huifang, Interactive Art Design: Theory and Application of Art Content Design from the Perspective of Semiotics, Zhenjiang: Jiangsu University Press, 2020, p. 143.] It was originally mostly used in digital interface design. It takes advantage of users' existing cognition and thinking about actual objects, allowing them to avoid spending extra time learning new metaphors and designs. For instance, when UI elements are combined with similar items in the real world, it can reduce users' cognitive burden. As for the design of interactive operations, "mimicry" refers to matching the virtual interaction actions between humans and machines with the physical actions in reality, in order to enable users to experience the feelings of the real world in digital devices, making it more immersive and immersive. For instance, in an interactive game with the theme of "Retracing the Long March", players experience the hardships of the Long March and need to cut tree bark to satisfy their hunger. The mimicry operation design requires users to simulate the action of cutting tree bark in the real world, dragging the small knife at the waist to the area near the tree trunk. The system background calls the physics engine and sets the task difficulty based on the physical state of the person when they are extremely hungry. Players need to move up and down or left and right multiple times to complete the action of cutting the bark, simulating the harsh environment of the soldiers during the Long March. This allows users to experience it more realistically and deeply while also having a deeper understanding and resonance with the spirit of the Long March.

3. Emotional Interaction: Resonance Design in the reflection layer

3.1 Resonance exploration in content

Popularization transformation. In the process of presenting red culture in digital form, it is necessary to

fully consider whether the form and content of the work are sufficiently life-like and popular, and whether they can be accepted by the general public. Especially for red cultural symbols with high "thresholds" such as poetry and literature, designers should bring them down from their "pedestals" by expanding the stories and condensing the main themes, so that the public can more easily reach the deep cultural connotations they carry and thus resonate with them. Popularization treatment is a necessary step in creating works that are popular among the people, making the works better meet the people's growing spiritual and cultural needs.

Differentiated design. To achieve the socialization of red culture among all people, it is not only necessary to address the symptoms in terms of appearance and interface, but also to carry out differentiated treatment in the content of dissemination. Audiences of different ages and educational levels have varying comprehension abilities. If a set of content is used everywhere, it can easily lead to a deviation in users' understanding of red culture, making the dissemination of red culture not only ineffective but may even have the opposite effect. Therefore, the digital interaction design for the 20th National Congress of the Communist Party of China's red culture requires that even if the content is created around the same historical event, it should be differentiated and customized for audiences with different cultural levels and comprehension abilities, so that every word and every sentence plays a positive role in the dissemination of red culture.

Field-based experience. The field is a combination of the physical and the spiritual. The physical field refers to a specific spatiotemporal range, while the spiritual field means the thoughts, emotions and spiritual forces metaphorically represented or symbolized by the elements within this spatiotemporal range [12]. Field experience is an important way to enhance the understanding and memory of red culture. "It mainly 'experiences' the presence of history through people's behaviors and manners, and restores the experience activities of historical plots and scenes, so that the common memory of social members is solidified through continuous repetition." [Zhang Li et al., Red Gene: Changes in Inheritance Mechanism and Contemporary Construction, Beijing: People's Publishing House, 2020, p. 191.] Therefore, the content construction of digital interactive design for red culture can be based on a specific historical field, creating audio-visual and interactive experiences that conform to the temporal and spatial characteristics of that field, providing users with a realistic sense of "presence", and making it easier for them to resonate with red culture. Recently, with the advent of the metaverse concept, the field has further differentiated into a "virtual" part. To a certain extent, the virtual field has broken through the temporal and spatial limitations of the real field. Users can access the mirror image reproduction of a certain red cultural historical field in the metaverse through VR and other technologies, reducing the experience cost of "historical presence". This also provides a brand-new track for the digital interaction design of red culture, namely the creation of the metaverse in the red cultural field. Designers can use technologies such as digital twins to restore objects and events in the red history within virtual scenes [13], allowing users to fully immerse themselves in the interaction and strengthen their emotional identification with the red culture through dynamic narrative experiences.

3.2 Fascinating structure

Change the person's perspective. Change the narrative perspective of the story from the common third-person omnichantic perspective to the first-person subjective perspective, and transform the user's identity from an onlooker to a direct participant in the story. The change in person closes the user's "God 's-eye view", narrowing the range of information they can receive, which is more conducive to guiding users to follow the designed content step by step, gradually immerse themselves in and identify with the story, and generate a flow experience. In addition, this method can also make the content more authentic and credible. Different from the form of "telling stories", the change in personal perspective can greatly enhance the appeal of the content to the audience and is also of great help in effectively conveying the spiritual connotation of red culture.

Package the premise of the story. An important part of human cognition is the ability to establish connections. Every experience is not an isolated event. People will constantly look for similarities between their current and past experiences, and deepen their understanding of the current situation through such connections. Therefore, in the digital interaction design of red culture, it is necessary to avoid a straightforward and flat narrative. Instead, some scenarios closely related to users' lives can be used as entry points, such as libraries, classrooms, bedrooms, etc., to establish connections with real experiences, helping users understand the content more quickly and accurately, and enhancing their sense of immersion and identification. Then, use it as the initial scene to design story conflicts and twists. For instance, the protagonist suddenly travels back in time to a certain historical point, thereby continuing the main content of the story. This can make the content structure more dramatic and captivating, guiding users to be curious about the remaining content, enhancing their self-motivation to experience the product, and effectively maintaining user stickiness.

3.3 The core spirit of modernization

Modernize the dissemination of discourse. The main

audience of contemporary red culture socialization are not the witnesses of the modern Chinese revolution, and it is difficult for them to directly resonate with the revolutionary struggle spirit of red culture. Therefore, in the design, the dissemination discourse of red culture should be shifted towards the spirit of struggle, dedication and innovation in socialist construction, making it closer to real-life scenarios and shortening the path for the public to transform the red spirit from reception to practice.

Modernize the inheritance cases. Red culture is not confined to modern revolutions and the establishment of red regimes. It has also been constantly reinterpreted and expanded in various stages of development since the founding of the People's Republic of China. Focusing on the digital interactive design of contemporary red culture, more typical new cases of red culture in recent times can be explored, such as the spirit of space exploration and the spirit of the Winter Olympics, to investigate their connection, inheritance and development with the early red spirit. By borrowing cases that the audience is more familiar with or has even personally participated in, their attention and interest can be stimulated, and a clearer and deeper understanding of the core spirit of red culture can be formed by combining their own experiences.

3.4 Personalized cultural experience

The design of the reflection layer needs to meet more diverse user demands through a series of extensible designs, with personalized customization as a representative [14]. Personalized customization encompasses two aspects: aesthetics and content. Personalization at the aesthetic level refers to the design of diversified interactive components and element appearances, such as different theme dialog boxes, icon styles, etc., allowing users to independently choose applications based on their aesthetic preferences, which helps to change the stereotyped and fixed impression of red culture in users' minds. Personalization at the content level refers to presetting multiple possible storylines. Users can control the progress and direction of the content at specific nodes. Under the premise of respecting historical facts, the originally single-line story content is expanded to generate diverse plot development paths, creating a unique emotional connection and experience of red culture for users. This sense of "exclusivity" is more likely to evoke users' identification and resonance.

3.5 Phased self-identity

The Goal gradient effect refers to the fact that the closer a person gets to a goal, the stronger the motivation to achieve it will be. For designs themed on red culture that may be rather extensive and profound, although popularized and visualized processing can make it easier for users to understand, it is still not conducive to enhancing user loyalty and memory

retention rates. Users may give up halfway through the product experience or persist in experiencing the complete product without remembering the content the product intends to convey. To keep users focused, designers need to make users feel the continuous advancement of progress, gain self-identity from the progress, and thereby generate a sustained interest and motivation to use the product.

There are three ways that can help designers arrange product content in a gradient manner. First, break down the overall content into multiple task stages based on elements such as time and space or themes, and establish a continuous and complete goal system for them. This ensures that users always have a clear purpose-driven approach throughout the entire usage process. This not only enables users to have a deeper and clearer understanding of the product content structure but also reduces their usage pressure, allowing them to complete the experience "in small amounts and multiple times". Second, set up reward measures, such as points, upgrading levels, obtaining titles, and giving level-limited skin accessories, avatar frames, etc., to match the user's experience progress with their "status and position", enabling them to continuously gain a sense of self-identity in the process of achieving their goals, and thus leave a relatively deep impression on the experience process and content. The third is to display the progress percentage. According to the user's location security needs, especially for products that require continuous and linear experiences such as H5 and interactive videos, even if phased tasks are designed, users will still face fear and worry about the unknown overall volume, which gradually wears out their patience and eventually leads them to give up the experience. Therefore, for such products, it is necessary to constantly update and display the user's current progress within the visual interface, making them feel that they are getting closer and closer to the destination, and thereby generating self-identity.

3.6 Building lasting memories

Human memory of information is divided into three stages: instantaneous memory, short-term memory and long-term memory. Among them, short-term memory is the most unstable and crucial step. If we want users to eventually internalize red culture as their own spirit, it is first necessary to ensure that the red culture information can break through the blockade of users' instantaneous memory and enter the short-term memory stage. Then, through continuous repetition, stimulating emotions and other methods, the transformation from short-term to long-term memory can be facilitated. The research of American psychologist George A. Miller indicates that the capacity of human short-term memory is limited, with only approximately 7 ± 2 chunks [15]. The user is

unable to receive it

Conclusion

The Republic is red and this color cannot be diluted. Over the past 70-plus years since the founding of the People's Republic of China, red culture has been passed down from generation to generation and flourished in the great historical process of socialist revolution, construction and reform, and has become a unique spiritual symbol of the Chinese people. In the face of the current situation where the mainstream values of red culture are increasingly eroded by the instrumental rationality of information technology in the era of entertainment supremacy and traffic dominance, digital interaction design can enhance the quality of communication content, help red culture penetrate the hearts of the public, evoke emotional resonance, and achieve the efficiency of socialized communication of red culture. Based on Maslow's hierarchy of needs theory, this paper sorts out the demand model of digital interaction design under the vision of socializing red culture. On this basis, it explores how to enhance the emotional communication power of red culture interaction design products from three levels: instinct level, behavior level, and reflection level, and constructs a set of red culture digital interaction design methodology system. It is hoped that this can provide metaphysical design guidance for subsequent related practices in the academic circle or society, jointly promoting the internalization and transformation of red culture into the self-spirit of the masses, facilitating the continuous inheritance and continuation of its excellent spiritual connotations, and providing a stronger spiritual pillar for the Chinese nation.

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