



Enhancing the Experience of Malaysian Traditional Chinese Temples Through Virtual Reality (VR) Educational Games

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Abstract. Malaysia is a multicultural nation with different races in Southeast Asia. It has rich and diverse cultural and heritage treasures; the Chinese constitute around 25%. As a cornerstone for traditional Chinese religion and culture, traditional Chinese temples have undergone the evolution and incorporation of local characteristics in Malaysia. As a result of modernization, assimilation, and globalization, this cultural heritage needs to be preserved and inherited in many forms. Educational games are not only for learning basic science and simple classroom applications, and the trend shows that educational games with traditional cultural connotations are starting to occur, and VR educational games as teaching tools begin to support virtual visual communication. This study uses a qualitative method, and in the research process, searches and collects relevant theme games on the market for analysis. This study takes the inheritance and development of traditional Chinese temples in Malaysia as an extension of traditional Chinese culture overseas, uses VR educational games as a medium, combines educational games flow theory design theories, and proposes to build a new model of problem-based and interactive learning based on the virtual environment of educational games. Therefore, it aims to improve Generation Z's understanding and learning of traditional Chinese temples in Malaysia, play the right role in inheriting and preserving the heritage, promote digital cultural exchanges between China and Malaysia, and seek new research content for the diversification of game themes.

Keywords: Malaysian Traditional Chinese Temples · VR Educational Games · Flow Theory · Digital Heritage · Generation Z

1 Introduction

During the Ming and Qing dynasties, a large number of Chinese began to migrate to Malaysia, and now Malaysia has become one of the four predominantly Chinese countries in the world [1]. The main immigrant provinces at that time were Fujian, Guangdong, Guangxi, and Hainan in China [2]. They brought their religions, including Buddhism, Taoism, and folk religions. After a long period of development and localization, the religious rates in Malaysia are 17% for Buddhism, 12% for Taoism, and 2.6% for other traditional Chinese religions. Along with the demands of life and spirituality, they started

to bring a lot of Chinese native culture to Malaysia, such as Chinese traditional decorative patterns which are rich in auspicious symbolism and widely used in Malaysian Chinese communities, particularly in Malaysian Chinese temples. Since this research is not a specific study of religious behaviour, but some special localization and creation of Malaysian traditional Chinese temples using visual reality educational games design, the sects of traditional Chinese temples are not distinguished in the process of research, and all temple types are collectively referred to as Chinese traditional temples, specifically to analyze some visual reality art performances in the process of local dialect fusion.

As a symbol of the nationality and power of the family in China, architectural decoration art has presented the emotional hope of ethnic prosperity, to reach the realization of a rich life. Due to the combined effect of Chinese culture and Malaysian culture at that time, architectural art is characterized by its free and diverse content [3]. The early Chinese immigrants set up altars first, then built small temples, and then expanded into large temples according to the expansion of the community [4]. Every temple built by the Chinese in Malaysia is the crystallization of collective strength, expressing their pursuit of the artistic, historical, and cultural values of their hometown. It has a beneficial effect on the dissemination of culture in later generations, the expansion of design ideas and tourism, and the restoration of cultural monuments. It guides the construction of overseas temple structures, no longer superficial references [5]. Now Traditional Chinese temples are all over Malaysia, according to a pictorial history of 1400–2004 by [6], and the publication contains many historical photos of temple architecture in Malaysia, which are precious historical materials for temple Decorative Design research. For example, Qing Yun Ting (Fig. 1 and Fig. 2), built in the 15th century, is the oldest traditional Chinese temple in Melaka, Malaysia. All building materials and craftsmen are imported from China. The main seat of the main hall is enshrined in Guanyin (观音), and Emperor Guan (关帝) and Mazu (妈祖) are on the left and right. The architectural structure of Qing Yun Ting reflects the craftsmanship of construction workers and artisans who immigrated here from southern China, especially Fujian province.

The architectural style strictly follows the principles of Feng Shui, and there are seven kinds of decorative techniques, including carving, sculpture, color, paste, masonry, writing, and painting, which are in charge of different artists. The decorative patterns are mainly divided into two categories: the first one is based on symbolic themes, including animals, utensils, plants, text, and geometric patterns. For example, animal themes include phoenixes, lions, white elephants, tigers, dragons, goldfish, and phoenixes. Plant



Fig. 1. Qing Yun Ting, Melaka, Malaysia [7]



Fig. 2. Qing Yun Ting, Melaka, Malaysia [7]

themes include geometric plants, flower decorative patterns, and so on. The other one is based on character themes. Many legends and stories are depicted on the temple walls. For hundreds of years, it has been responsible for offering sacrifices, making friends, and serving as a court arbitration institution for the Chinese community.

In the post-epidemic period, mutual learning, field trips, cross-border art, and cultural exchanges between China and Malaysia are restricted, and educational games appear as a new tool for engagingly learning cultural content [8]. As an emerging communication medium, educational games [9] are a type of functional video game specifically for education that emerged in the context of the development of contemporary information technology and educational thinking. It plays a unique role and value in various fields such as entertainment, culture, economy, education, and art, which can turn life experience and fun into the purpose and means of learning and are also the theory and practice of designing, developing, and managing appropriate technological scenarios and resources to integrate learners' life experience with their development. The game audience can experience the fun of the games and perceive the concept that the game designers want to spread. Game-based learning with its new media Platform motivates users to make the course come alive and provides a learning method for autonomic learning, critical thinking, productive thinking, instant feedback, and collaboration.

Looking back at the history of educational games, we find that in 2002, the Woodrow Wilson International Centre for Scholars in Washington, D.C., launched the Serious Games Initiative to encourage the design and development of games that addressed policy and regulatory issues. In 2003, the International Game Developers Association's event director Jason Della Rocca gave a keynote speech "Serious Games: The Potential Socio-Economic Impact of Games," at China Joy, in which he defined "serious games" as "games that are not primarily for entertainment" and cited games <SimCity> for training mayors, <DOOM> for training marines and other classic game works to testify his definition. At the Serious Games Summit in 2004, educational games were first classified as serious games and were defined as interactive educational technology applications that outdo the traditional game market, including personnel training, policy discussions, educational analysis, visualization learning, simulation study, education promotion, and health and medical care. Game-based learning can easily overcome that, creating a sense of immersion [10]. While the application of educational games as teaching tools to supplement teaching and improve learning has long been a hot topic of research in various educational fields, the application of VR educational games as teaching tools

to support classroom teaching and improve learning efficiency has been a hot topic of research in various educational fields, little research has been able to touch on this issue in the field of traditional Chinese temples art education.

2 Problem Statement

Generation Z refers to the generation born between 1997 and 2012 prioritizes education [11]. As Generation Z learners come to institutions of higher education and as personalized learning becomes common, new approaches to learning will become less of a novelty and more of a necessity [12]. Online learning easily distracts the learner [13]. People learned about Malaysian Chinese temples through the Internet, pictures or videos, and books, and no longer appreciate their beautiful architectural forms and traditional Chinese Pattern design elements [6]. They want to know more about the architectural building process, evolution history, auspicious symbolism, temple activities, and the current status of these temples.

The VR educational game learning environment is still developing, exploring, and expanding compared to the real learning environment, and if learners do not perceive the difference between reality and virtual, it is easy to cause an imbalance in self-perception and get lost in the virtual world. Therefore, to explore the characteristics of temple heritage VR educational games and create an interactive medium, it is necessary to use the flow theory [14] as a guide to provide a platform for the audience's learning and communication. In VR educational games, learners should not only be aware of the importance of self-construction, but also learn to correctly handle the relationship between virtual and real selves, actively promote the integrity and unity of the self, and thus achieve personal development goals of "self-actualization".

This paper's objective is to investigate how (if) the issue of immersive experience is addressed in research on VR educational game development processes, to adapt to the interest characteristics of Generation Z games.

3 Research Questions

To derive relevant findings and achieve the research objectives according to the pre-programming, the following two questions can determine the core information. The research questions (RQ) are as follows:

RQ1: How to use a VR educational game platform, compare VR educational game design principles, and design an educational game framework for instruction to enhance the learning and experience of traditional Chinese temples in Malaysia?

RQ2: What are the advantages and innovations of applying VR educational games to learning about Malaysian traditional temples in the post-epidemic era for Generation Z?

4 Purpose of Study

The purpose of this study is to discover the characteristics of temple heritage VR educational games, create an interactive medium, and provide a platform for audiences to learn and communicate. Researchers have become increasingly interested in the specific

effects of Chinese traditional decorative patterns. Zhang [15] theorizes that the aim of research on the process of overseas dissemination of Chinese traditional culture is to inspire Chinese younger generations to continue interested in and respect traditional principles when planning and designing architectural projects. Several empirical studies have focused on traditional Chinese temples decoration in Malaysia [5, 16–18] and exploring sustainable promotion strategies for Malaysian-Chinese temples as cultural attractions [19] and interdependence while a systematic review by [20] confirmed the ornament has a close relationship with belief and symbol [21]. The academic community has not yet conducted a systematic study to sort out the evolution of Chinese temple decoration design in Malaysia. The research results will be disseminated by combining the accessibility, efficiency, and high popularity of Virtual Reality Educational games.

The VR educational games will include Chinese temples from geographic areas with large Chinese populations in Malaysia. These educational games by virtual means give people a realistic sense of the art design features and cultural heritage of the scenes for use on online platforms, such as a study from the modeling design fundamental element, shape structure, building details, building material innovation, material, and construction technology, structural technology innovation and other aspects of the building facade modeling innovative design method and applications. This will provide an immersive experience for users and stimulate continuous research in the games industry to improve immersive and interactive experiences.

5 Research Methods

Referring to the current study which aims at the Generation Z game market, it is essential to understand the formation of VR educational Chinese temple heritage applications. Since the traditional Chinese temples in Malaysia were built following Chinese immigrants in the Ming and Qing dynasties and combined with the local Malaysian culture to produce some changes, it is recommended to use historical methods to discover and compare their information. The historical approach is a qualitative method that reconstructs historically relevant phenomena. It is a type of scientific research work to investigate elements from history. It differs from other scientific research as the subject matter is hard to capture, that is the past. Besides, reliving history with Virtual Reality Educational games has also been utilized in the early stages of the design process. The research uses specific traditional Chinese temple and heritage educational game case studies, game design flow theory, and comparative techniques to study the lack of systematic research on the Immersive Cultural Experience Game Design framework and ideas.

According to the distribution of Chinese in 13 states and 3 federal territories in Malaysia [22], the Chinese mainly live in Johor, Melaka, Negeri Sembilan, Negeri Perak, Negeri Pulau Pinang, Negeri Sarawak, Negeri Selangor, and Kuala Lumpur, The Chinese population in each of these states or Federal Territory exceeds 20% of the total population. During the research period, the main focus is on the appearance of the decorative art of these traditional Chinese temples, such as temple types, architectural components, carving art, deities, establishment and repair processes, significant historical events, and other decorative art forms, through a comparative study of traditional Chinese temples in China. By comparing the inheritance and development of traditional Chinese temples in

Malaysia, we study the carrier forms, techniques, symbolic meanings, and expressions of the decorative patterns, and research how to put these elements into virtual experience VR educational games.

The steps to carry out the method are as follows:

- a) Identify research topics. The purpose of the study is to provide a global online platform for Gen Z audiences to learn immersively and communicate. And discover the characteristics of temple heritage VR educational games, and create an interactive medium.
- b) Extensive literature review, collecting information or data from sources. Information or data collected is historical evidence used to interpret the past and assess suitability for qualitative analysis. In the research process, the research uses inductive logic, combined with a conceptual framework process that references the onion research theory [23] diagram. The overall is divided into three parts, which are the definition of the research scope, research process, conclusion, and further work, in detail has six steps from the top to the bottom, The specific steps are as follows: 1&2) Define the research, it is the philosophical layer, which identifies the cause-and-effect relationship of the phenomenon, defining the research concept as how to enhance the Gen Z learning experience of MCT roof decorations. 3) analyzed through literature and qualitative research, The demand analysis provides a detailed understanding of learning methods, learning platforms, and the characteristics of traditional Chinese temples, and 4) is to use the specific methodology verification hypothesis. By using basic research related to educational pathways and evaluation criteria of relevant evaluation methods, enhancing the immersion of educational games, their sustainable learning effects will be improved. 5) is the specific strategic layer, analysis time horizon, history, and localization development of MCT roof decoration elements from OCT, As the content of VR educational game for Gen Z. And 6) is the most central is the collection of techniques and data to draw research conclusions, figure out a demand-driven study on the optimization of learning in MCT roof decoration, also design and suggestion MCT VR educational game framework.
- c) Consider the ideal sample by selecting the appropriate qualitative analysis method and evaluation sources. Since the number of MCT is limited, it is more efficient to study a few representative samples within a limited scope. The more the Chinese population there is the more cultural exchange and artistic integration of Chinese temples. Therefore, the Selection of the MCT study sample and participatory observation is more representative by selection from the location. The researchers ranked the percentage of the Chinese population in these places in order of most to least, and selected five MCTs, they are Kek Lok Si Temple, Thean Hou Temple, Johor Old Chinese Temple, Sam Poh Tong Temple, Cheng Hoon Teng Temple. Consider the ideal sample and select the appropriate qualitative analysis method. Based on Core Content: what is the connection between OCT and MCT decorations, then identify the connection between decoration elements of MCT and OCT is particularly important. After combing through the literature, sort out 5 OCT with historical and cultural origins through clues, every Comparison group shares the main deities worshipped, architectural style sources.
- d) Analysing and summarizing the Documentary.

6 Findings

The research aims to discover if immersive VR educational games can be used as an effective pedagogical tool for Generation Z if blended with traditional lectures by assisting in learning Malaysian traditional Chinese temples, and gaining memory and knowledge retention while increasing edutainment value.

The contribution of this research is to compare the short- and long-term effects of video gaming by using the same measurements [21]. It demonstrates the relevance of using gamification to improve learning outcomes while [24] contributes to the theory of in-game goods purchases by explaining why and how video game players purchase different types of in-game goods.

The essence of VR educational games is reflected in the following two points: first, they are still new, and “educational games” are defined as games that develop the knowledge, skills, intelligence, emotions, attitudes, and values of the game users. Second, they are computer games with some educational significance and have the essential characteristics of traditional video games. In China, many educational institutions started to use interactive courseware as early as a few years ago [9], and this multimedia courseware can be regarded as an early serious game. Although its interactivity is still too simple to be regarded as a game in the absolute sense, they exist to transmit information to users through an interactive experience. With the development of network technology and the rapid popularity of computer games, the development of domestic VR educational games has begun to show promising signs, such as Dunhuang Mogao Caves [24], the Palace Museum (2019). This promotes the traditional Chinese heritage architecture culture as the first element, with VR educational games as the core design element. For the psychological characteristics and cognitive rules of Generation Z, it is important to research a framework for the design of educational game products that are designed to understand the deep core of traditional Chinese temple culture genes, so that everyone can have a visual, auditory, and interactive learning understanding of traditional Chinese temples in Malaysia (Fig. 3).

American psychologist Csikszentmihalyi first proposed the theory of Flow theory, which means a deep immersion experience when an individual is fully engaged in an activity. It is accompanied by a loss of self-awareness, a lack of sense of time passing, and a simple enjoyment [14]. Enhancing immersion in the Chinese traditional temples through virtual education games can be summarized in three points: the beginning,

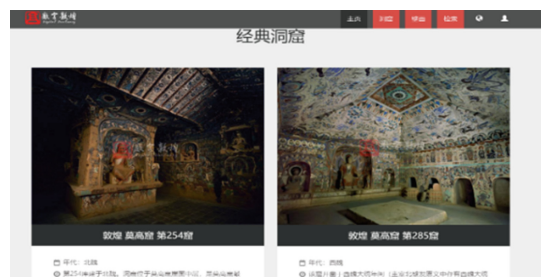


Fig. 3. Dunhuang Mogao Caves Web game [24]

the continuation, and the end of the process. Based on game design mind flow theory and educational game design related achievements, the design framework of the virtual Malaysian Chinese traditional temple game is constructed, and it is found that several elements can enhance the immersion experience of players, mainly including clear game character goals, timely game feedback and the unity and balance of the game backstory. To sum up, the design of a VR educational game about Malaysian traditional Chinese temples can be divided into four stages: game goal analysis, game context creation, gameplay design, and game element design, and each stage should take corresponding design tasks to make the stage design results have the conditions for mind flow experience generation. The game's objective is to make Generation Z students interested in Malaysian traditional Chinese temples and can understand and interact with them through the VR educational game platform through audio-visual language. The game context setting can be based on the history of Chinese immigration to Malaysia to create a story based on real history or a similar background story, preferably with a first-person character as the game protagonist to give players a sense of immersion. The gameplay design can be based on the popular museum VR educational games, not only including traditional game entertainment but also the immersive virtual experience of subtle learning knowledge.

7 Conclusion

The current comparative and retrospective studies on Chinese temples in Malaysia and temples in southern China are becoming more and more attractive, but the learning and research process reflects problems such as weak learning ideas. The reason for this is also the opportunities for people to explore the field have become less in the post-epidemic era. How to learn these studies systematically through VR educational games and sort out the development history of Chinese temples is summarized as the following three points: First, the research content needs to be systematically sorted out by time and content, integrating their inner connection, humanistic and historical factors respectively. Secondly, the research ideas are mostly based on specific cases combined with VR educational games for research and qualitative analysis. Third, the research perspective is internationalized, drawing on pedagogy, communication, and design to carry out interdisciplinary research. With the renewal of the platform, the way of knowledge production and dissemination of Chinese temple culture has changed. In terms of the overall practice and development, the VR educational games combined with Chinese temples in both countries undoubtedly inject new vitality into the contemporary research, drawing on the literature review of the original research to reveal the essence of Chinese temple VR educational games in depth, define them effectively conceptually, and construct a complete learning framework at the theoretical level. Interactive learning of these traditional Chinese temples through VR educational games maintains and enhances Generation Z's enthusiasm to visit or revisit the sites.

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