

Designing game for helping people learning Taiwanese culture

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Abstract

Taiwanese culture holds immense value, with its rich heritage and history being recognized worldwide. While efforts have been made to preserve tangible cultural heritage, intangible aspects such as knowledge and beliefs have often been overlooked. To address this gap and contribute to the preservation of Taiwanese cultural heritage, technology has been harnessed, with games emerging as a popular medium.

This study explores the advantages of using games to promote understanding and appreciation of Taiwanese culture. Through a literature review and examination of existing serious games related to Taiwanese culture, a research game was developed. Expert interviews were then conducted with professionals from the game industry and cultural creativity sector, providing diverse perspectives and invaluable insights.

The feedback obtained from these expert interviews demonstrates a positive reception towards the concept of using games as a tool for cultural education. Furthermore, the suggestions and recommendations provided by the experts have significantly contributed to the enhancement and refinement of the prototype game. As a result, valuable guidelines have been derived, serving as a roadmap for future designers interested in creating serious games centered around Taiwanese culture.

Keywords: Cultural heritage, serious game, cultural game, Taiwanese culture

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1. Introduction

Taiwan is internationally recognized for its diverse and culturally rich heritage, influenced by the successive administrations that have governed the region. Notable cultural heritage include European-style fortresses constructed by the Spanish and Dutch during the 16th century, as well as Chinese temples dating back to the Ming and Qing Dynasties. Japanese temples from the period of Japanese colonization also contribute to the cultural

landscape of Taiwan [1]. These cherished cultural treasures hold considerable historical and touristic value.

Despite the Taiwanese government's commendable efforts to preserve cultural heritage, its focus often remains predominantly on tangible aspects, such as architectural structures and artifacts. However, the safeguarding of intangible cultural heritage presents greater challenges, as it resides within the realm of knowledge and beliefs held by individuals [2]. Consequently, numerous valuable intangible cultural heritages face the looming threat of extinction. An especially glaring example is the erosion of languages in Taiwan, particularly among Aboriginal communities. The

United Nations Educational, Scientific and Cultural Organization (UNESCO) employs the Language Vitality Assessment tool to evaluate the intergenerational transmission of languages [3]. A government study conducted in 2017 employing this tool revealed that the majority of Aboriginal languages in Taiwan have been classified as either extinct or critically endangered [4]. Additionally, various traditional craftsmanship skills confront decline as they are gradually supplanted by easier and more cost-effective alternatives. For instance, the traditional art of crafting paper umbrellas is dwindling as contemporary synthetic umbrellas, which offer affordability and durability, gain popularity [5]. This shift has resulted in a decline of the traditional paper umbrella industry, with fewer individuals showing interest in acquiring the specialized skills required. Similar scenarios unfold within numerous other Taiwanese traditional crafts. The gradual disappearance of these cultural practices underscores the urgency of preservation endeavours.

In conjunction with conventional educational approaches, such as books and lectures, innovative methods of cultural education have emerged, leveraging technological advancements. Websites, online databases, and platforms play instrumental roles in disseminating extensive information about Taiwanese culture. Museums employ immersive technologies such as augmented and virtual reality to create captivating experiences for tourists, augmenting their understanding and appreciation of Taiwanese culture during their visits. Among the array of technological applications, games possess the potential to exert a profound influence on individuals. Engaging and entertaining games often attain widespread popularity and attract substantial media attention in Taiwan [6]. However, it remains uncertain whether players engage with games solely for entertainment purposes or if they genuinely grasp the embedded cultural significance. This research aims to delve into this subject matter and address the research question: "What are the educational benefits of utilizing games for teaching Taiwanese culture?"

To address this question, the research will conduct an extensive review of existing literature pertaining to cultural games and Taiwanese culture. It will also examine existing games with cultural themes, encompassing both commercial and serious games. By identifying the benefits of using games for Taiwanese cultural learning, the research will develop a research game based on insights derived from the literature review and existing games. Subsequently, expert interviews will be conducted, featuring professionals from the game and cultural creativity industries. The invaluable feedback gathered will not only assist in refining the research game but also contribute to a comprehensive understanding of the advantages associated with learning Taiwanese culture through games. The significance of this research lies in its identification of the benefits derived from employing games in cultural education, as well as its provision of guidance and recommendations for future designers interested in creating similar types of games.

2. Related Works

When examining the process of designing an educational game with a focus on cultural learning, three key aspects warrant discussion. Firstly, it is imperative to explore the fundamental elements that are crucial to an educational game. By comprehending the significant factors that render an educational game appealing to players, we can ascertain its effectiveness in achieving its educational objectives. Secondly, an examination of games featuring cultural themes is necessary, encompassing not only educational games but also commercial games designed for entertainment purposes. Such games often encapsulate cultural values within their thematic content. Lastly, we will delve into the essential components required to create a Taiwanese cultural game. The insights gained from these discussions will facilitate the development of a research game.

2.1. Educational Game

Scholars have put forth various perspectives on the constituent elements of games, including goals, mechanisms, interaction, theme, narrative, and art design [7][8]. However, when focusing on educational games, factors that enhance the player's learning experience, such as feedback, goals, and interaction, take precedence [9].

Feedback plays a crucial role in educational games as it directly influences the player's sense of accomplishment. It encompasses the information or response received when a player successfully achieves a goal within the game [10]. In role-playing games (RPGs), for instance, players level up after completing quests or obtain rewards from treasure chests. In racing games, the feedback is achieving a new record time, while in fighting games, it is the defeat of opponents, akin to a sporting victory. Effective feedback is vital for sustaining player engagement and fostering a long-term educational experience [10].

Traditionally, the goal of games involves solving problems or overcoming obstacles. However, in educational games, the primary objective is to facilitate players' learning process. Hence, it is crucial to align the educational objectives with the in-game goals to enable effective learning and practice [11]. Puzzle games have gained popularity in the educational genre due to their ability to convert educational problems into game objectives.

Interactivity stands as a critical element in educational games, encompassing how players engage and interact with the game [12]. Interaction serves as a medium for player immersion and engagement, making it essential to integrate learning content through interactive elements [13]. "*FakeMuse*" provides an illustrative example—a game where players act as art appraisers and scrutinize artwork to identify forgeries—showcasing learning through gameplay and interactive experiences [14].

Finding the balance between educational content and entertainment in games presents a challenge. However, establishing a connection between the core elements of a

game and the intended educational content is crucial. In the context of this research, the challenge lies in developing methods that enable players to simultaneously learn about cultural heritage and derive enjoyment from the game's entertainment aspects.

2.2. Cultural Game

The utilization of games for cultural learning is a common practice in both commercial and educational contexts [8]. Commercial games, primarily created for entertainment purposes, encompass a wide range of themes, including fantasy, science fiction, historical, and mythological. However, games that are based on historical events or periods often incorporate a strong cultural theme [15]. For instance, *Age of Empires II: The Age of Kings* [16] is a strategic game that features various historical conflicts, such as the Mongolian invasion and the Crusades. Through gameplay, players can gain insights into different cultural aspects of medieval Europe, including agriculture, architecture and handcrafting.

Contemporary games also exist that aim to showcase the culture of the modern era. *Taiko no Tatsujin: The Drum Master!* [17], the latest installment in the *Taiko no Tatsujin* series, is a rhythm game where players use the Taiko, a traditional Japanese drum, as the primary instrument. The game features predominantly Japanese music tracks, including pop songs, anime themes, and folk music, while its visual elements are connected to Japanese festivals, further reinforcing cultural associations [18]. These examples of games offer players a distinct cultural learning experience as they engage in gameplay.



Figure 1. Screenshot of *Taiko no Tatsujin: The Drum Master!* with Japan visual elements
© Bandai Namco Entertainment

Numerous successful instances of educational games designed to facilitate learning can be identified. For instance, *Relive* is a serious game developed to teach children and adolescents cardiopulmonary resuscitation (CPR) techniques and skills [19]. *Make A Cup of Tea* is a game intended to support caregivers of individuals with dementia by providing messages and recommendations to help them

understand the condition and cultivate empathy [20]. Additionally, *FakeMuse* is a game focused on the forgery of artifacts, where players assume the role of a museum curator and must examine various artifacts to determine their authenticity [14].

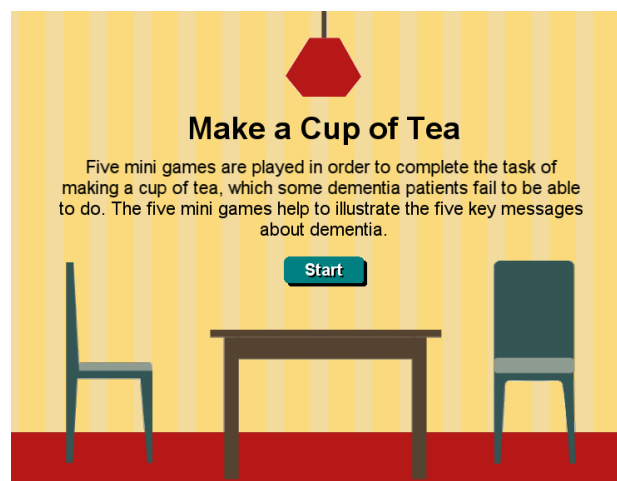


Figure 2. A screenshot of dementia supporting game: *Make a cup of tea* [20]

While the primary objective of commercial games is entertainment, the thematic elements they incorporate offer players an opportunity to gain insights into past and present cultures, often resulting in a cultural learning experience without their explicit awareness. Moreover, there is an abundance educational games designed specifically for cultural learning, offering the added benefits of heightened engagement, and interactive experiences. As a result, educational games have emerged as a prevalent approach for delivering cultural learning experiences.

2.3. Game for Taiwanese Culture

To promote the appreciation of Taiwanese culture, it is crucial to integrate it with contemporary trends and disseminate it in a highly appealing manner. Therefore, this research aims to develop a game that takes the form of a social media platform, resembling the most popular social media applications in Taiwan, namely Instagram.

The popularity of social media in Taiwan has witnessed a steady rise since the introduction of the Chinese version of Facebook in 2008. Currently, social media platforms have become an integral part of daily life for Taiwanese individuals. Politicians utilize these platforms to connect with their constituents, promote their ideas, and even launch attacks on their opponents. Influencers leverage these platforms to share their experiences with various products, visit tourist attractions, and indulge in unique culinary experiences. Furthermore, ordinary citizens frequently use social media to share personal stories and engage with their online social circles. Consequently, many people in Taiwan

spend a significant amount of time scrolling through social media platform on a daily basis [21].

There are several potential advantages to developing a game that emulates a social media platform. Firstly, players will already be familiar with the layout, even if they have never played a game before. As social media platforms have become an integral part of Taiwanese daily life, individuals of all ages, ranging from young children to the elderly, have experience using such platforms. Secondly, integrating the game within existing social networks would facilitate easy sharing and dissemination, potentially leading to viral spread. Thirdly, social media posts typically include an image, a description, and a location, making them a suitable medium for delivering cultural content that is connected to our everyday lives. By consistently featuring cultural elements, such as local cuisine or tourist attractions, players may be encouraged to explore these aspects of traditional culture in real life.

3. Designing the Game

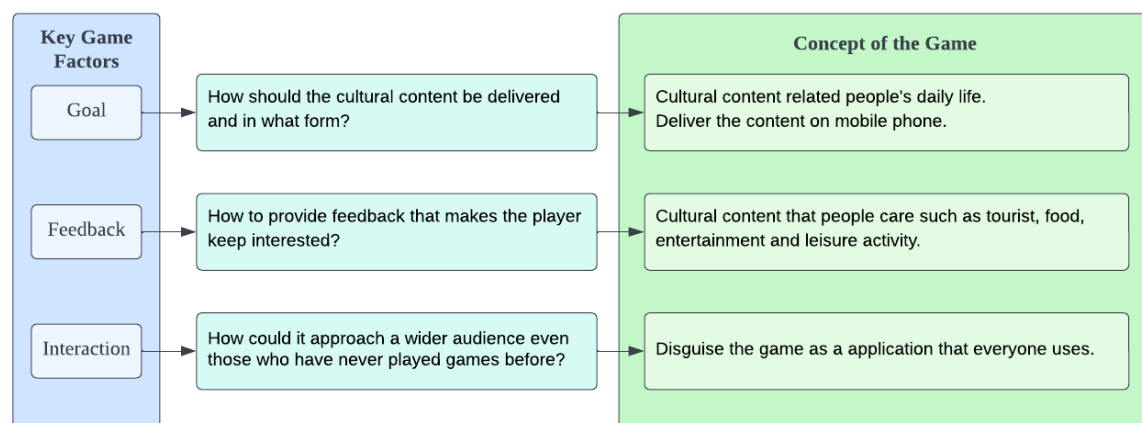


Figure 3. Developing game concept of the research game

By addressing these questions, the research game takes the form of a social media platform due to its widespread popularity among Taiwanese individuals [21]. The cultural content is presented as posts within the social media platform, allowing for a diverse range of cultural content to be shared. For instance, the posts could highlight traditional foods found in night markets with a history spanning over a century, religious activities that attract millions of pilgrims annually, or traditional activities such as tea leaf picking. These cultural activities are often intertwined with people's daily lives and leisure time [22]. As individuals browse the social media posts containing information about Taiwanese cultural heritage, they may reminisce about personal experiences or engage with specific trends [23]. For example, if someone comes across a post recommending a highly regarded restaurant, they may feel inclined to try it themselves. This integration of cultural content directly

3.1 Develop the Core Concept

The initial phase of game design involves the establishment of a core concept that serves as the basis for guiding and inspiring the researcher in shaping various elements of the game, including gameplay, content, platform, and mechanics. This conceptualization process revolves around three essential questions that pertain to the key game factors discussed in the previous chapter: goal, interaction, and feedback [9].

To arrive at a game concept, the researcher addresses the three questions that pertain to the key game factors as illustrated in Figure 3. The questions are as follows:

- (i) How should the cultural content be delivered and in what form?
- (ii) How to provide feedback that make the player keep interested?
- (iii) How could it approach a wider audience even those who have never played games before?

related to daily life enhances players' interest and engagement with the game.

3.2 Develop the Game Elements

Following the establishment of the core concept, various elements of the game, including the user interface layout, workflow, game content, and mechanics, need to be determined. The primary objective is to develop a cultural heritage game that closely resembles a familiar social media platform, specifically drawing inspiration from Instagram, the most popular photo-oriented platform in Taiwan. By incorporating a familiar layout and user experience, the game aims to provide a seamless transition for players.

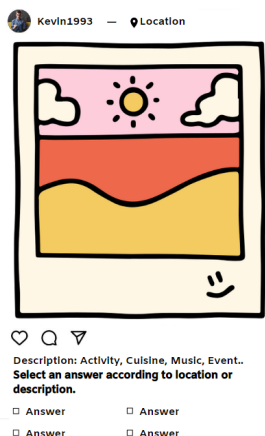


Figure 4. User interface layout of the research game

In the game, cultural content is presented in the form of social media posts that simulate everyday life scenarios. Each post consists of three essential elements: a picture, a description of the cultural heritage, and its location. However, the description adopts a conversational tone rather than a formal or lecturing style, replicating the manner in which an ordinary person would share on social media. The inclusion of location information establishes a connection between the virtual game and real-life situations, as players have the opportunity to visit the locations that pique their interest. To encourage interactive and engaging experiences that require active player participation, a keyword is deliberately missing from either the description or location, prompting players to choose the correct answer from four options provided (as depicted in Figure 5). This approach enhances memorization of cultural information through interaction.

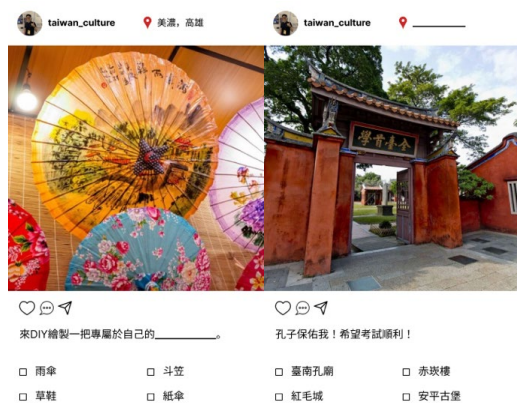


Figure 5. Examples of posts missing key word or location

In the subsequent stage, after players select an answer, the game presents additional comprehensive information

about the cultural heritage depicted in the post (as shown in Figure 6). This allows players to deepen their understanding of the subject matter and verify the accuracy of their chosen answer. Once the quiz is completed, players can progress to the next quiz, which is also displayed in a format reminiscent of a social media post. The overall game experience simulates the act of browsing through a social media platform.



Figure 6. Examples of the answer and detailed information about cultural heritage

The workflow of the research game begins with an introduction that outlines the game's objective, which is to learn about Taiwanese culture through a series of quizzes presented as social media posts. The first quiz immediately follows the introduction. After selecting an answer, an answer page appears, providing the correct answer while offering detailed information about the cultural heritage associated with the quiz. Players then proceed to the next quiz, emulating the experience of scrolling through content on a social media platform.



Figure 7. Workflow of the game

4. Results and Finding

4.1 Introduction

The experiment involved conducting expert interviews with 21 participants who have a background in the game or culture industry. Each participant was given seven questions to answer. The interviews served two main purposes: firstly, to collect feedback for enhancing the research game, and secondly, to gain insights into the factors that should be taken into account when developing a game with the goal of educating people about cultural content.

4.2 Sentiment Analysis

For data analysis, the researcher employed NVivo software. The responses from the experts were subjected to sentiment analysis using a tool that categorized them into four groups: "Very positive," "Moderately positive," "Moderately negative," and "Very negative". Sentences that didn't fit into any of these categories were considered neutral and were excluded from the analysis. The findings indicated that the majority of the experts expressed positive feedback regarding the evaluated game. Throughout all the questions, both very positive and moderately positive feedback were more prevalent than negative feedback as depicted in Table 3. However, the question concerning enhancing player feedback during gameplay received a higher number of negative responses due to limited interaction and feedback of the current state of research game. Nonetheless, these responses were considered valuable for the development of the final game. Additionally, the final question, "Any other suggestions for this game?" also elicited a higher rate of negative responses. The experts provided valuable feedback concerning game design and cultural content. In the subsequent sections, the authors offer a detailed

analysis and discussion of the feedback received for each question.

Table 3. The results of sentiment analysis using NVivo

	Very negative	Moderately negative	Moderately positive	Very positive
What are your thoughts on the concept of this game? (Inspired by a social media platform)	1	1	3	2
What game elements do you think could be added to increase player's interest?	0	1	8	2
How to improve player's feedback while playing the game?	1	5	7	0
What cultural aspect do you think is missing in this game?	0	1	1	3
Do you think there is any cultural content in the game that might offend people?	1	0	2	1
What kind of cultural content could gain more interest?	0	2	3	2
Any other suggestions for this game?	0	4	5	1

4.3 Thematic Analysis

This research conducts a thematic analysis of the data, with a specific focus on the three questions related to

game design, followed by the three questions pertaining to cultural heritage. The responses will be carefully coded based on their content, and codes that share similarities will be grouped together to form broader themes. These themes will offer valuable insights into the crucial elements necessary for the research game, as well as aid in the analysis of the final question.

4.3.1 Thematic Analysis on Feedback about Game Design

In this section, author delves into the discussion of the three questions pertaining to game design, namely:

- (i) What are the user's thoughts on the concept of the game?
- (ii) What game elements do users think could be added to increase their interest?
- (iii) How to improve player's feedback while playing the game?

The analysis of the experts' opinions on the concept of the game yielded several themes, including "Attractive to Non-Gamers," "Simple Gameplay," "Combining Social Media," "Technical Issues," "Educational," "Potential," "Too Easy," "Interactive," and "User Interface." The experts found the game to be appealing to non-gamers and appreciated the incorporation of social media as a theme. However, some experts felt that the game was too easy and that its educational content might lead to quick loss of interest. Technical bugs were also identified as an issue, and some experts expressed concerns about the lack of feedback in the user interface, which could potentially make the game boring for users. The frequency of appearance for each theme is illustrated in Figure 8.

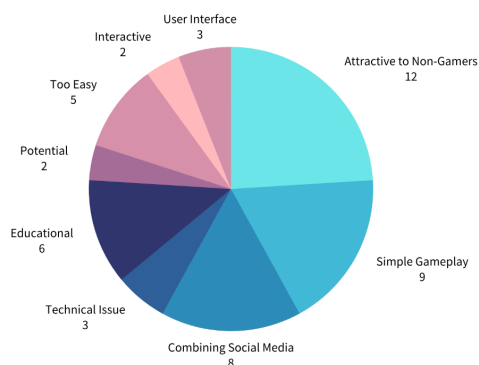


Figure 8. Frequency of each theme's appearances regarding the response of question 1

The analysis of user suggestions regarding game elements that could be added to enhance player interest revealed several themes: "Visual Design," "Competition Mode," "Question Classification," "Modern Pop Culture," "Different Game Modes," "Rewards," "Instagram Integration," "Easter Eggs," "Story Elements," and

"Difficulty Level." The frequency of appearance for each theme is depicted in Figure 9.

Users proposed incorporating visual design improvements to enhance the game's aesthetic appeal. They also suggested introducing a competition mode where players can compete against others, as well as implementing different game modes that go beyond quizzes. Users highlighted the importance of question classification, enabling players to navigate to content that aligns with their specific interests. Suggestions were also made to include references to modern pop culture to attract younger audiences.

Enhancing engagement was a key focus, with users recommending the inclusion of story elements and rewards to motivate players. Instagram integration and the incorporation of Easter eggs were suggested to make the game more interactive and immersive. Additionally, some users expressed the desire for an increased difficulty level, as they found the game to be too easy.

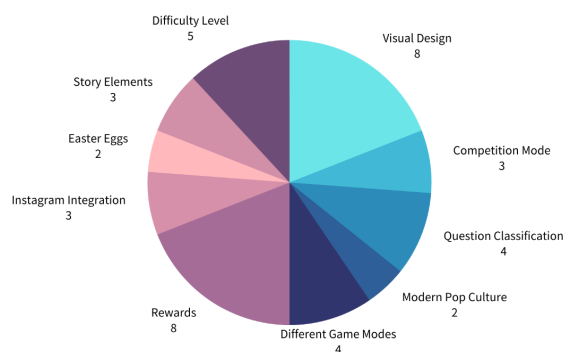


Figure 9. Frequency of each theme's appearances regarding the response of question 2

The analysis of expert suggestions for improving player feedback during gameplay yielded several themes: "Progress Indicator," "Feedback," "Difficulty Level," and "Animation," as illustrated in Figure 10.

Experts recommended incorporating a progress indicator to provide players with a sense of how far they have progressed in the game. Some experts proposed enhancing feedback by introducing more interactive elements, such as a like button or enabling players to leave comments. Additionally, suggestions were made to utilize geotags to highlight tourist attractions within the game, thereby enhancing player engagement and feedback.

Increasing the difficulty level was also suggested as a means of maintaining player interest and challenge. Finally, many experts emphasized the importance of implementing animation for various player action within the game, as it can enhance the overall player experience and make the gameplay more engaging.

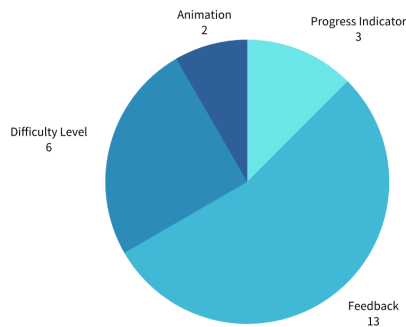


Figure 10. Frequency of each theme’s appearances regarding the response of question 3

Based on the thematic analysis of the first three questions, several conclusions can be drawn. Experts found the concept of the game to be appealing, particularly to non-gamers, and appreciated the incorporation of social media as the game’s theme. However, there were concerns regarding the game’s educational content being too easy. Additionally, technical bugs were identified as potential issues that could impact the overall gaming experience.

To address these concerns and make the game more engaging, experts suggested various improvements. These included incorporating different game modes, introducing question categories, incorporating modern pop culture references, offering rewards and Easter eggs, incorporating story elements, and increasing the difficulty level to enhance player interest. Furthermore, experts recommended implementing features such as a progress indicator, improving feedback mechanisms, allowing for customizable difficulty levels, and incorporating animations for different actions to enhance player feedback during gameplay.

Overall, these suggestions aim to make the game more enjoyable, interactive, and challenging, while also providing meaningful feedback to players as they progress through the game.

4.3.2 Thematic Analysis on Feedback about Cultural Heritage

The analysis in this section focuses on investigating the cultural aspect of the game, based on three specific questions. The questions are as follows:

- (iv) What cultural aspect do you think is missing in this game?
- (v) Do you think there is any cultural content in the game that might offend people?
- (vi) What kind of cultural content could gain more interest?

The answers to the question "What cultural aspect do you think is missing in this game?" yielded diverse responses, encompassing a wide range of cultural aspects. Several themes emerged from these answers, including

Music, Movies, Architecture, Religion, Food, Ecology, Festivals and Customs, Literature, Art and Crafts, Indigenous Culture and History, Languages and Dialects, Fashion and Beauty, Social and Political Issues, and Taiwanese History. Among these themes, the most frequently mentioned were food (mentioned six times), traditional festivals and customs (mentioned four times), and Taiwanese art and crafts (mentioned three times). The detailed results can be found in Figure 11.

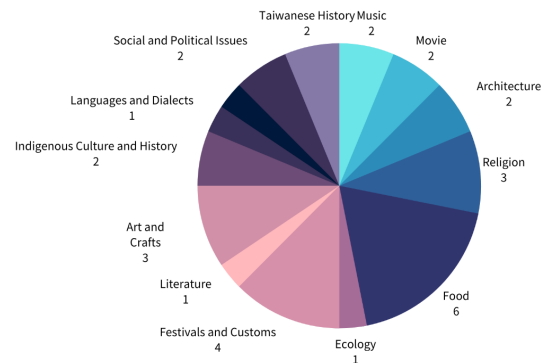


Figure 11. Frequency of each theme’s appearances regarding the response of question 4

The responses to the second question were unanimous, with all participants stating that there was no cultural content in the game that could potentially offend people. However, some respondents emphasized the importance of being cautious and respectful towards the rights of using symbols and pictures. This highlights the need to ensure proper representation and avoid any misappropriation. The detailed findings can be observed in Figure 12.

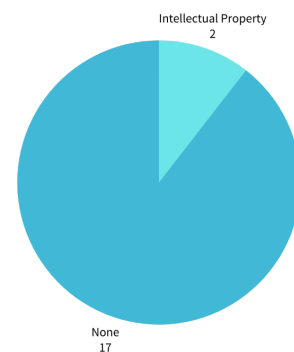


Figure 12. Frequency of each theme’s appearances regarding the response of question 5

The analysis of expert suggestions regarding cultural content that could generate more interest among players revealed several themes: Indigenous Culture, Taiwanese Cuisine, Taiwanese History, Tourist Attractions, Urban

Legends, Traditional Taiwanese Festivals and Celebrations, Taiwanese Calligraphy and other Traditional Art Forms, Taiwanese Fashion, Taiwanese Language and Dialects, Taiwanese Technology and Innovation, Taiwanese Sport Culture, Taiwanese Environmentalism and Conservation Efforts, and Taiwanese Folklore and Mythology.

The most frequently mentioned themes were traditional Taiwanese festivals and celebrations, traditional craftsmanship and art forms, and Taiwanese cuisine. These cultural elements were highlighted as potential sources of interest and engagement for players. The frequency of appearance for each theme can be observed in Figure 13.

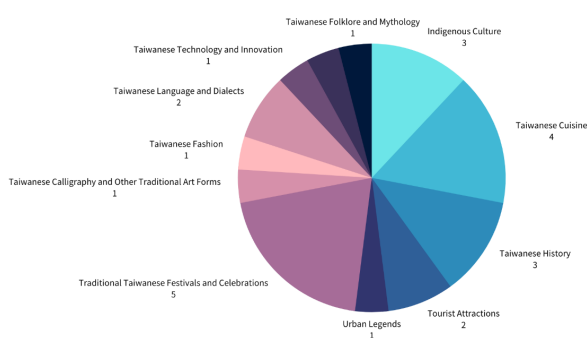


Figure 13. Frequency of each theme's appearances regarding the response of question 6

The analysis of the respondents' feedback highlights a diverse range of cultural aspects that could potentially be incorporated into the game. Among the identified themes, the most common ones were food, traditional festivals, and traditional craftsmanship and art. It is notable that the respondents did not find any existing cultural content in the game that might offend people, although they emphasized the need to respect intellectual property rights when including cultural elements.

Based on these findings, it is recommended to enhance the game by incorporating additional cultural content related to food, traditional festivals, and crafts and arts. This could significantly increase player interest and engagement. Furthermore, the respondents offered suggestions for optimizing the game experience, such as organizing cultural elements thematically and providing more detailed location markers. Implementation of these modifications has the potential to greatly improve the overall gaming experience for players.

4.3.3 Analysis on the Final Question

During the final phase of the interview, the experts were asked for any additional suggestions for the game, allowing them to share their final thoughts. This open-ended question elicited both positive and negative feedback, with recurring themes related to technical issues and the game's difficulty level.

Some experts pointed out technical issues with the game's user interface design. Suggestions were made to improve the clicking experience by creating larger grid cells and adjusting the position of buttons. It was emphasized that these technical issues should be addressed to ensure a smooth user experience across different devices and display ratios.

The difficulty level of the game was another topic of discussion. Experts highlighted that the current difficulty level might be suitable for foreigners but considered it too easy and lacking in engagement for Taiwanese players. To address this concern, it was suggested to adjust the difficulty level and introduce different levels of knowledge to cater to a wider range of players. Offering customizable difficulty options was deemed desirable to accommodate individual preferences.

On a positive note, experts expressed their appreciation for the game's concept and expressed anticipation for its update release. The game was described as interesting and captivating, with a spirit that resonated with the experts.

In conclusion, the experts' feedback provided valuable insights for improving the game and enhancing the overall gaming experience. Addressing technical issues, adjusting the difficulty level, and incorporating customizable options were key recommendations to consider. The positive feedback further validated the appeal and potential of the game's concept.

4.4 Summary and Finding

Based on the analysis of the experts' feedback, it can be concluded that their overall response to the research game was positive. The sentiment analysis indicated a generally positive attitude towards the game, while the thematic analysis highlighted the appreciation for the game's social network representation and its simplicity of gameplay.

In terms of cultural content, the experts provided valuable suggestions to enhance the game. They emphasized the need to address the potential issue of the game being too easy for Taiwanese players and recommended incorporating features that allow for deeper exploration of cultural topics. The experts also proposed the inclusion of modern cultural elements, such as sports culture and fashion, to attract specific audience segments.

While the feedback was predominantly positive, the experts also offered constructive criticism to improve the game. They stressed the importance of ensuring a smooth and enjoyable gaming experience similar to scrolling through a social network application. The experts further recommended implementing a customizable difficulty level to cater to different player preferences. Additionally, to sustain player interest, the suggestions included introducing a competitive mode, different game modes, and additional content.

Overall, the experts' feedback provides valuable insights and highlights areas for improvement in the game. By addressing the suggestions and incorporating the recommended enhancements, the game has the

potential to appeal to a wider audience and offer a more engaging and enjoyable experience.

5. Conclusion

The research acknowledges the neglect and declining recognition of Taiwanese cultural heritage, particularly among the younger generation. To address this concern, this research proposes the implementation of a game as a means to preserve and promote Taiwanese culture. The positive feedback from expert interviews validates the potential of this approach and provides valuable insights for the refinement of the research game.

However, the research has limitations. Time constraints prevented further development of the research game based on the expert feedback, as well as conducting experiments with the target audience. Future research should prioritize gathering insights from ordinary Taiwanese individuals through game testing and surveys. Additionally, technical issues were raised by some experts, indicating the need for ensuring a technically sound game.

Despite the challenges, the team remains committed to this endeavor due to the value of Taiwanese culture. The aim is to create a final game that effectively facilitates cultural learning and fosters a deeper appreciation for Taiwanese culture. The findings of this research can serve as a resource for other researchers and game designers interested in cultural game-related research. The hope is to inspire more designers to engage with Taiwanese culture through games, thereby promoting broader understanding and appreciation of it among the public.

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