Design and Development of a Thai Learning Board Game for Chinese Families in Bangkok

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Abstract

Background and Aim: This study investigates the Thai language learning needs of Chinese families living in Bangkok, aiming to design a board game that assists Chinese families in Bangkok in learning practical Thai language. Despite increasing Chinese migration to Thailand and a rising demand for Thai language resources, there is still a lack of board games tailored to Chinese families.

Materials and Methods: This study employs a mixed-methods approach, targeting Chinese families in Bangkok and recruiting 10 families as the research sample. By summarizing sentences from the Pickup Thai website and Thaipod101 website and combining them with the results of a questionnaire survey of 100 Chinese in Thailand, the researcher analyzes the Thai learning needs of Chinese families. As well as their preferences for board game art styles. The researcher analyzes six top-selling language learning board games and family board games, learn their advantages, and designs the gameplay of the board game in combination with expert interviews.

Results: The findings reveal that Chinese families in Thailand primarily seek to learn Thai vocabulary, sentences, and Thai cultural knowledge, with particular emphasis on six key scenarios: weather, restaurant, traveling, transportation, expressing feelings, and greeting & introducing yourself, as the sentences about these six scenarios are prioritized by over 50% of survey respondents. The content of the final board game includes Thai words, sentences, and cultural knowledge. The gameplay combines CLIL theory with knowledge of Thai cuisine, attractions, etiquette, and history, and is suitable for families. Players' trial feedback showed that the board games designed in combination with CLIL theory aroused their interest in further learning. The overall art style adopts a hand-painted style, and different theme colors are used to distinguish the learning content.

Conclusion: This study summarizes the specific needs of Chinese families for learning Thai and designs a board game product suitable for Chinese families in Bangkok.

Keywords: Board Game; Chinese Families; Thai Language; Thai Learning; Family Learning

Introduction

In recent years, more and more Chinese have come to live in Thailand. At present, there are 22,082 Chinese working in Thailand (Ministry of Labor, 2024), ranking first among the total number of foreigners holding Thai work permits. This is one of the groups of people. Another group of people who live in Thailand for a long time are families who send their children to international schools in Thailand. For example, in 2023, there were 715 international students at Singapore International School in Bangkok, of which 68% were Chinese students (Lee & Nguyen, 2023). All of the above situations have increased the demand for Thai language teaching.

Board games are a type of learning media. They are classified as instructional materials. They are a type of board game that is played on a flat surface, such as a table. They have a variety of playing styles and themes (Rakchan, 2017). Many studies have shown that learning through board games can help students learn languages effectively. As we can see from the research of Luangthanakul (2021), who developed a board game and a communication exercise set for Grade 11 students majoring in Chinese. It was found that the ability to write and communicate after learning with a board game, together with a communication exercise set, was higher than before learning. Since Thai and Chinese have certain similarities in grammar, the main difficulties Chinese people face when learning Thai are pronunciation and spelling (Liao, 2008). Board games are also a very suitable learning medium for families. As the research of Olcars and Guler (2023) shows, using board games as a family to learn a second foreign language can lead to more in-depth learning.

However, there is a lack of teaching aids on the market for Chinese people to learn Thai. The researcher searched online and found that language institutes that offer Thai language courses for foreign children accept students aged 4-15 years. The website "Longtunmom Home" (longtunmom website), which provides information about education, recommends that parents study a second language with their children. Visitors to this website can find books or videos that parents can bring to study and teach their children before the foreign children come to study at Thai schools. However, there are still very limited media for teaching Thai to foreigners. From the importance and background of the problem, the researcher is therefore interested in designing a type of board game for basic Thai language learning to help Chinese families in Thailand.

Objectives
　　1. To analyze the learning needs of Chinese families living in Bangkok.
　　2. To design and develop a Thai learning board game for Chinese families living in Bangkok.

Literature review
　　1. Board games in language learning
　　In the literature on using board games to learn languages, Olcars and Guler (2023) proposed that the use of board games in CLIL classes is a new trend. He explored IC components in CLIL-based family game interactions. His research showed that establishing mutual understanding is accomplished through sixteen different interactional resources, including the use of L1 (mother tongue), re-examining the card individually or as a group, using certain discourse markers, hinting through visuals on the card, embodiment of verbal utterances, and checking a vocabulary item from a phone. These findings provide ideas for developing a family board game for foreign language learning.
　　2. Design principles for family-friendly games
　　In terms of board game design, there is also a lot of design theory support. Jesse Schell (2008) believes that there are 10 core elements of board games: game experience, goals, rules, player interaction, feedback systems, balance, randomness vs strategy, narration and theme, scoring and rewards, and replayability. Building on this, Venngren (2021)explored the use of the synaesthetic design principle in game design because she observed that in game design, UI design is often limited to text, and implementing symbols, behaviors, and sounds can make players feel more interested and more immersed in the game.
　　3. Cultural and aesthetic considerations
　　Cieslak (2022) believes that in game design, colors with wavelengths of light such as red and yellow can be used to attract players' attention. Contrasting colors, that is, colors that are opposite to each other on the color wheel, can guide players' attention.
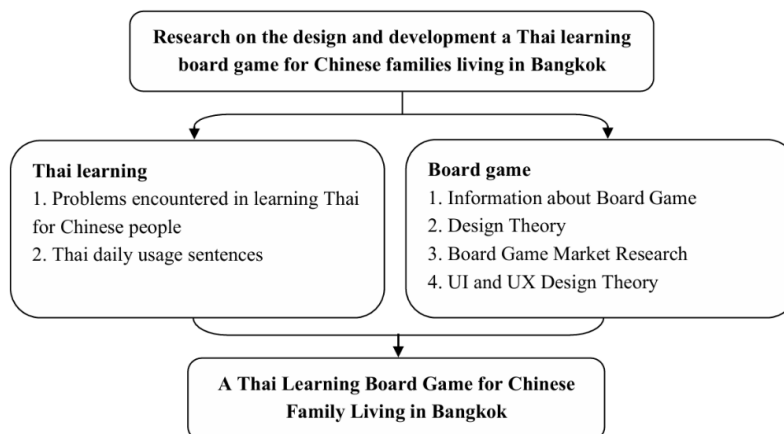
Conceptual Framework

Figure 1 Conceptual Framework
Note: Constructed by the researcher

Methodology

The title of this research is "Design and Development of a Thai learning Board Game for Chinese Family Living in Bangkok", and this study employed a mixed-method approach, which involves corresponding literature research, a questionnaire, relevant interviews, and a case study.

Literature research method is a research approach that involves systematically gathering, analyzing, and synthesizing existing scholarly works to build a foundation for further study. In this study, the Thai keywords and sentences from the Pickup Thai website and the ThaiPod101 website, which are platforms that provide Thai learning tutorials to foreigners and have a large fan base on social platforms.

The questionnaire method is a research tool that involves collecting data through a structured set of written or online questions, allowing researchers to gather standardized responses from a large number of participants efficiently. In this study, 100 respondents were selected using purposive sampling methods to measure the willingness and inclination of Chinese families in Thailand to learn Thai. These 100 respondents met the conditions of living in Thailand for more than half a year and living as a family unit.

Relevant interviews involve direct conversations with participants to collect detailed qualitative data on a research subject. In this study, the researcher interviewed three Thai teaching experts to gain deeper insights into the common difficulties faced by Chinese in learning Thai from the perspective of Thai teachers, as well as the categories of Thai sentences that need to be learned. The sample consisted of Thai teaching experts with more than 2 years of experience in teaching Chinese.

A case study examines a specific instance in detail to gain deep insights. In this study, the researcher analyzed three family board games that rank among the top three in sales on Taobao: 1. Super Farmer; 2. Rabbit trap; 3. Guess who I am, and three language learning board games that rank among the top three in sales on Taobao: 1. I win the phonics card game; 2. Yaofish Word Wiz; 3. I win. Hit the bill.

Results

1. Analysis of the learning needs of Chinese families

By distributing questionnaires to 100 Chinese residents in Thailand, the researcher found from the survey results that the majority of respondents were aged 30 or above, coming from three-member families and working as office employees with basic Thai language skills, primarily learning through online courses, apps, and offline educational institutions. Regarding the Thai learning board game, most respondents preferred playing for 30 minutes to 2 hours, with over half of respondents considering the following six key scenarios most essential for learning, ranked in descending order of preference: weather, restaurant, sightseeing, traveling, expressing feelings, and greetings/self-introductions. The survey revealed strong

interest in Thai culture - 88% wanted to learn about local cuisine, 68% about tourist attractions, and 54% about etiquette. Respondents generally preferred moderate game difficulty that teaches basic vocabulary while incorporating cultural elements. In terms of design, the favored color scheme combined white, purple, orange, and blue, with specific text formatting preferences: Thai text highlighted through both underlines and font variations, while Chinese translations used underlines only, along with a preferred hand-drawn illustration style. Usage patterns showed the board game would mainly be used in schools and educational institutions. Purchasing behavior indicated that most respondents previously bought similar products through offline channels and typically learned about new products through family and friends. The majority found the ¥50-100 price range appropriate, with 74% willing to pay more for superior quality materials. Additional desired features included a supporting app and more diverse learning materials to complement the board game experience.

The researcher interviewed three experts in Thai language pedagogy, each with over two years of teaching experience. The participants comprised: (1) a university professor specializing in Thai language instruction, (2) a teacher at a Thai language training institute, and (3) a Thai language educator with a substantial following on TikTok.

Based on the interview responses, all three experts recommended that the board game design should place particular emphasis on pronunciation instruction, while flexibly incorporating multimedia aids such as videos and audio. All three experts agree that sentences about self-introduction, family-related, and expressing appeals are more necessary for Chinese people to learn. Regarding content other than language teaching, experts believe that elements of Thai culture that can be added include food, attractions, etiquette, and famous books. Regarding the design of the game, these three experts suggest that the illustrations should be exquisite, and the game should have a reward mechanism and be interesting enough. Regarding the marketing of board games, these three experts generally believe that more people can learn about this board game through online promotion through videos.

2. Case study of the top-selling products in the market

The three top-selling family board games		The three top-selling language learning board games	
Super Farm er	**Figure 2** Super farmer **Note:**https://shop34833115.world.taobao.com/?spm=pc_detail.29232929.shop_block.dshopinfo.50aa7dd6S5OAD5	I won the phonics card game.	**Figure 3** I won the phonics card game. **Note:**https://60jn2ltd8feltviq389dzjyzlw86gky.world.taobao.com/shop/view_shop.htm?appUid=RAzN8HWYTRNVetnbZrD3R76FwHRx1sSQKrxtuvXNemgxdtkAhan&spm=a21n57.1.hoverItem.2
Rabbi t trap	**Figure 4** Rabbit trap **Note:**https://temi.world.tmall.com/shop/view_shop.htm?appUid=RAzN8HWJvFEg6igUZTJY	yaofish Word Wiz	**Figure 5** yaofish Word Wi **Note:** https://item.taobao.com5

The three top-selling family board games	The three top-selling language learning board games
ktCZHa4LhkwufF9HfkbrwLgg9wvqakL&spm=a21n57.1.hoverItem.2	

Gues s who I am		I win, hit the bill.	
	Figure 6 Guess who I am **Note:**https://ysrwj.world.tmall.com/shop/view_shop.htm?spm=pc_detail.29232929/evo365560b447257.shop_block.dshopinfo.929e7dd6buuu5t		**Figure 7** I win Hitt the bill **Note:** https://yaofish.world.tmall.com/shop/view_shop.htm?appUid=RAzN8HWTd5YPPhDJ8rP5R6gFWPh178dCD7ydMqVFft1o2AJ8a5Y&spm=a21n57.1.hoverItem.4

From these three family board games, the researcher finds that all three board games adopt a competitive game mode, but the final player will not be produced before the end of the game. The game not only tests the player's game skills but also involves some luck. Rabit trap and Guess Who Am I place more emphasis on physical and verbal interaction. These points can be applied to designing the interaction mode and gameplay mechanics for the board game in this study.

From these three language learning board games, it can be observed that all of them use high-contrast colors to highlight learning content, and different types of cards are distinguished by color. I Win Hit the Bell also incorporates symbols to represent different grammatical components. Both the I Win Phonics Card Game and the I Win Hit the Bell combine content with visuals. These key points can be applied to the graphic design of the board game in this study. Unlike English-language games, the design of Thai learning board games can focus on the similarities between Thai and Chinese grammar, and the emphasis on pronunciation rather than spelling.

3. Board game design

Color design: The researcher extracted six color schemes from the top three best-selling family board games and language-learning board games collected from Taobao. These color schemes were presented in the survey, and respondents were asked to choose their favorite one. Ultimately, the combination of white, purple, blue, and orange received the highest percentage of votes.
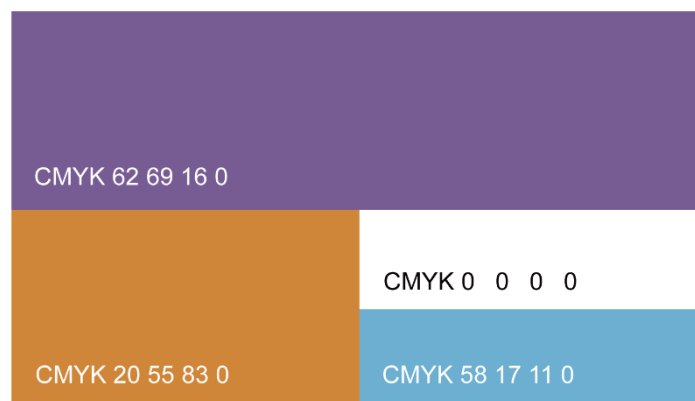

Figure 8 Color scheme
Note: Constructed by the researcher

Regarding the theme colors of the six scenes, according to color psychology, pink is suitable for the scene of "Express feelings", maroon is suitable for "Introducing Self and Greeting", yellow is suitable for the scene of "Travelling", and red is suitable for the scene of "Restaurant". According to color connections, blue or green is suitable for the scene of "Sightseeing", and blue is suitable for the scene of "Weather". Since blue is already one of the main colors of the board game, to avoid repetition, turquoise is chosen for the scene of "Sightseeing", and dark blue is used for the scene of "Weather".
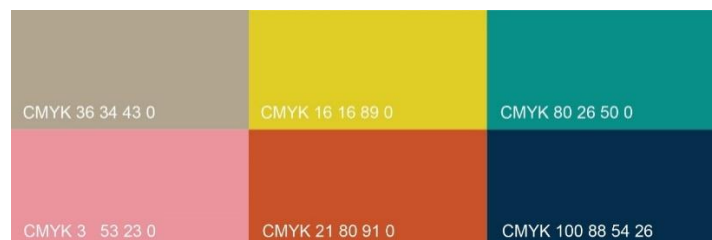

Figure 9 Color scheme of the scene cards
Note: Constructed by the researcher

Logo design: the "tree" symbolizes growth, representing both the improvement of language skills and the growth of children accompanied by their parents. The central "tree trunk" depicts a "child reaching up and cheering," expressing a thirst for knowledge and the joy of growth. The six leaves represent knowledge, and their different colors are inspired by the colors of the scenario cards in the board game.

Figure 10 Logo
Note: Constructed by the researcher

Symbol Design: Based on Graphic Design Theory, the researcher uses symbols to replace repetitive rule explanations, making the card interface more concise.

The "hourglass" symbol represents "quick-response challenges."

The "star" symbol represents "question/action challenges."

The "question mark" symbol represents "collaborative dialogue/sentence-building challenges."

Additionally, the symbols use the four colors: white, purple, blue, and orange. Among these colors, orange and blue are complementary colors, and orange and purple also create a strong contrast. Therefore, the researcher uses these two color combinations to design the symbols for the board game.

When appearing on the three scheme colors, the three symbols are designed as follows:

Figure 11 Symbols
Note: Constructed by the researcher

Layout Design: The text arrangement on the front of the card places the most important Thai language content at the top. On the back of the card, as the final step in the game process, the voice QR code is designed in the bottom-right corner to facilitate the voice learning step.

Illustration design: according to the results of the questionnaire survey, the respondents prefer a hand-painted style, so the illustrations and packaging of this board game are hand-painted. Some of the illustrations are as follows:

Figure 12 Illustrations
Note: Constructed by the researcher

Gameplay Design: In terms of learning content, the researcher reviewed 365 commonly used sentences summarized on the Pickup Thai website (https://pickup-thai.com/) and 289 keywords summarized on the ThaiPod101 website (https://www.thaipod101.com/dashboard). In addition, 35 sentences were excluded because they were not suitable for family board games, such as swear words and sentences about love topics. Of the remaining 330 sentences, 223 contain the keywords of the ThaiPod101 website. The 223 sentences are divided into 15 categories, of which 199 sentences can be divided into 14 categories according to usage scenarios, namely greetings & introducing yourself, family, communication, making friends, expressing feelings, memory, transportation, sightseeing, travelling, hotel, weather, restaurant, shopping, and hospital. And the last category is miscellaneous, which can be used in multiple scenarios. There are 24 sentences in this category. At the same time, based on the CLIL (Content and Language Integrated Learning) theory, the standout feature of this board game's gameplay is the integration

of language learning with subject learning. Therefore, in addition to Thai language learning, this board game also incorporates knowledge related to Thai culture, history, etiquette, and general knowledge, all embedded within six scenario-based "challenge" games. Furthermore, this part of the design has been informed by the suggestions of three experts. The "etiquette" knowledge section also applies UI (User Interface) theory, allowing players to engage not only visually and auditorily but also through physical actions. The six scenarios are derived from the top six scenarios ranked in a questionnaire survey, with all six scenarios scoring above the average.

According to UI theory, the board game's gameplay design emphasizes a "user-centered" approach. In the "collaborative dialogue/sentence-making challenge," players respond based on their real-life experiences. Additionally, the game incorporates a points system, drawing on the common rules of three parent-child board games. The game includes a win-or-lose mechanism, where players earn points for answering correctly or completing challenges, encouraging them to continue playing. The use of a point system ensures sustained engagement, addressing the challenge of early dropout seen in other learning tools. This aligns with the UI design theory of progressively revealing information. During gameplay, players first learn the pronunciation of Thai words, then understand their meanings through corresponding Chinese translations, and finally trigger "challenges" to acquire additional knowledge about Thailand beyond language.
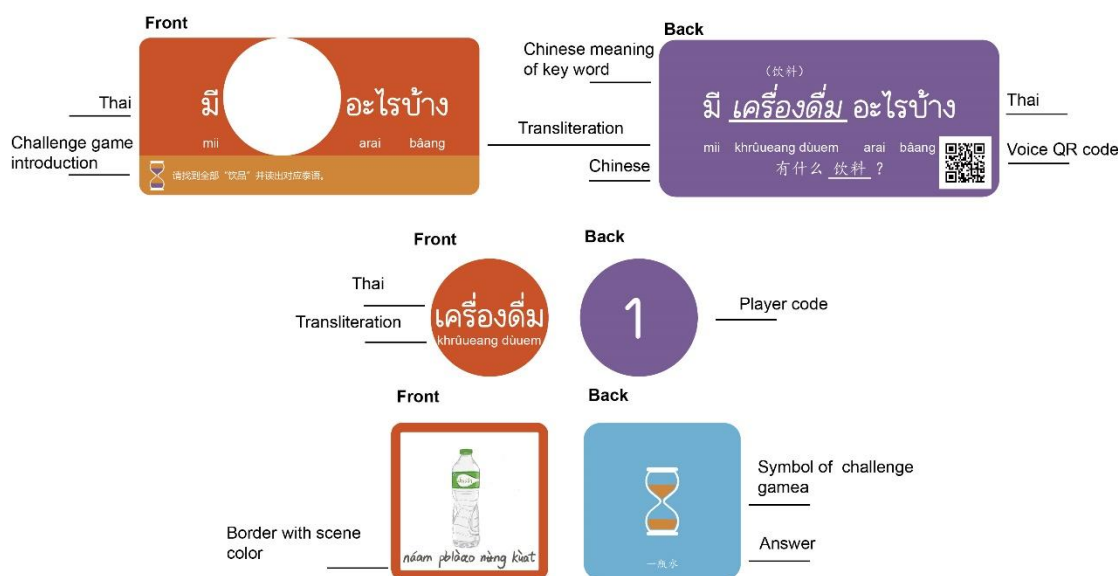
The overall design of the card is as follows:

Figure 13 Card instructions
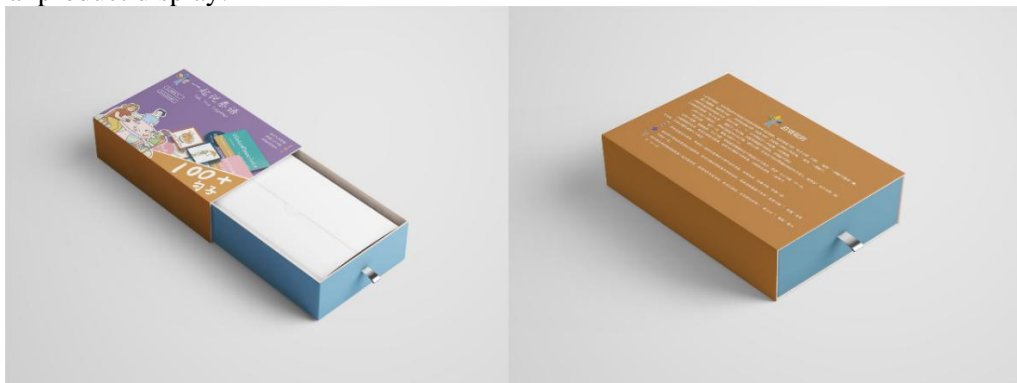**Note:** Constructed by the researcher

Final product display:

Figure 14 Packaging
Note: Constructed by the researcher

Figure 15 All kinds of cards
Note: Constructed by the researcher

Discussion

In this study, it was found that players have many problems with Thai pronunciation, and this problem was also mentioned in the interview with the experts. This is consistent with two of the four common problems mentioned by Hujiang Thai when Chinese people learn Thai: 1. Tones. 2. Distinguishing between vowels and consonants. 3. Grammar, that is, the order of subject, predicate, and object in a sentence. 4. Politeness. The fourth problem also attracted the attention of the respondents and experts. Among the respondents, 54% were interested in Thai etiquette. Two of the three experts mentioned that it is possible to add content in board games for Chinese people to learn Thai etiquette and honorifics. This problem is consistent with what Liao (2008) summarized in the Thai textbook 'Basic Thai (1)': Due to the similarity between Chinese and Thai grammar, the main problem Chinese people have when learning Thai is pronunciation. This board game can provide tools for Thai language teachers, or use the game in the board game to assist their teaching, especially when solving learners' pronunciation problems.

Since there are no board games designed for Chinese people to learn Thai sentences on the market, the board game studied and designed this time is the first one. When analyzing the three language education board games that rank top three in sales on Taobao, the researcher found that since these three board games are all English education board games, no matter whether the gameplay involves English words or English sentence grammar, they cannot be directly used as a design reference for learning Thai sentence board games, because first of all, Chinese people are not as familiar with Thai letters as they are with English

letters, and secondly, English grammar is different from Thai grammar. However, what is consistent in the gameplay design is that these three board games all have competition elements, and although the grammar is different, the gameplay of "making sentences" is also feasible in Thai.

When designing the board game gameplay, the game process includes reading sentences, filling in blanks to complete sentences, checking answers in Chinese, using illustrations to prompt answers, and card classification by scene. After 10 groups of Chinese families tried it out, their trial results showed that this gameplay is feasible. Players understand the learning content and can independently query more relevant knowledge. This matches with the IC components proposed by Olcars and Guler (2023) in the study of 'Chapter 7 Establishing mutual understanding in CLIL-based L2 game interactions'. Findings of the study reveal that family members share perspectives in English on (i) a vocabulary item, (ii) a game question, and (iii) candidate responses to the question on the card during a CLIL-based game to achieve mutual understanding, which is a component of interactional competence (IC). While participants responded positively to the game's competitiveness, further research is needed to assess long-term language retention.

In the design of this board game, the game wins and loses using a points system, which is competitive in nature. Players generally think it is more interesting. All test groups completed the entire game process and did not think the game should end early. This design is consistent with the four common characteristics of board games summarized by Sarinee Achwananthakul (2016) in the 'Board | Game | Universe': No elimination of players before the game ends; Real brain training and skill testing; Interaction between players; There is a tempting 'cake' and a smooth 'teaching' mechanism.

In this study, the design of the "challenge game" includes elements such as quick response and Namaste, which cover actions, sounds, and symbols. This design impressed most of the trial groups. This conclusion is consistent with the results of the expert Venngren (2021) in the study of 'Applying Principles of Game Design to User Interface'. Venngren (2021) said that adding symbols, behaviors, and sounds to game design can make players feel more interested and more immersed in the game.

Conclusion

1. Summarize the learning content

The researcher sourced 365 Thai daily expressions from Pickup Thai, which were categorized into 15 thematic groups based on usage scenarios. Fifteen of these groups include: greeting & introducing yourself, making friends, family, memory, expressing feelings, traveling, transportation, sightseeing, weather, hotel, restaurant, shopping, feeling unwell, communication, and miscellaneous. Additionally, 298 key vocabulary words were extracted from Thaipod101. After removing 35 phrases deemed unsuitable for family learning, the remaining 330 expressions were analyzed, revealing that 223 of them contained the key vocabulary. Through surveys, the researcher identified six scenarios that respondents prioritized for learning: weather, restaurant, traveling, transportation, expressing feelings, greeting & introducing yourself.

During playtesting, the researcher observed that the participating Chinese families generally struggled with pronunciation. Additionally, experts suggested replacing certain words in the phrases with alternatives that would be easier for players to remember. For example, replacing "ของฝาก" with "souvenir" — as Chinese players are more familiar with such English loanwords, and this substitution would remain practical for daily life usage.

2. Graphic design

The researcher summarized the color combinations used by the top three selling family board games and language teaching board games on the market, and combined with the questionnaire survey, selected the more popular "purple, orange, blue, and white" as the main colors of this design. The Thai daily usage sentences sorted out are divided into six groups according to the usage scenarios. These six groups of sentences use six colors to facilitate the distinction and organization of cards, namely: greeting & self-introduction corresponds to maroon, expressing emotions corresponds to pink, traveling corresponds to yellow, tourism corresponds to blue-green, weather corresponds to dark blue, and restaurants correspond to red.

In terms of text layout, the most important Thai language to learn is the largest in the middle of the card, followed by the transliteration part that players refer to when learning, and finally, the corresponding Chinese. The voice QR code is located in the lower right corner of the card.

3. Game design

The design of the board game adopts the main gameplay of speed racing combined with word filling and sentence making, and the CLIL theory is used to design the "challenge game", that is, to add the learning of other subjects to language learning to help learners deepen their impression of language learning. For example, in the research and design of this board game, knowledge about other subjects such as Thai geography, climate, etiquette, and history was added based on the results of the questionnaire and expert interviews. In the trial test, most of the test groups were impressed by the "challenge game" and were willing to practice many times and look up relevant knowledge on their own.

In terms of the win-lose mechanism, this board game will not produce a final player before the end of the game, and the point system is used so that players will not give up halfway through the game, and will feel satisfied when the game is settled.

In view of the common pronunciation difficulties of Chinese people when learning Thai, the research and design of this board game added a "voice QR code" to assist the game, help players check pronunciation, make the game process more convenient, and make the learning process more rigorous.

Recommendation

1. Future studies

This study and design mainly used CLIL theory, mainly involving non-linguistic subject knowledge such as Thai geography, climate, etiquette, etc., but it is not deep enough. Future studies should be designed for a certain field of disciplines. For example, knowledge of Thai etiquette can add more knowledge about customs, and design a Thai learning board game in combination with the customs of different regions in different Thai festivals.

2. Application of the research results

In this study, according to the feedback from the respondents, the sentences in the board game cover six scenarios: weather, restaurant, traveling, transportation, expressing feelings, greeting & introducing yourself. In subsequent related research, board games for learning sentences in other scenarios can be designed according to the needs of the research subjects.

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