Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.
“The Four Arts”
- A prototype interactive game for engaging and interacting with Chinese culture using touch screen interfaces

An exegesis to be presented in partial fulfilment of the requirements for the degree of
Masters of Design
in
Visual Communication Design
at Massey University, Albany,
New Zealand.

Li Wang
2011
Abstract

The main objective of this project is to explore the possibilities of digital media, to help users understand traditional Chinese culture through an immersive virtual experience. Through playing an interactive game one experiences and explores Chinese culture. Chinese culture is rooted in an ancient history, which might be difficult for other cultures to understand clearly and fully (Moore, 1967). Chinese language is poetic but it can even be obscure to even native Chinese speakers. Full understanding of traditional Chinese philosophy can take many years of learning, reflection and instruction.

“The Four Arts” aims to introduce Chinese culture through music (“Qin”), the Chinese traditional board game (“Qi”), Chinese traditional calligraphy (“Shu”), and Chinese traditional brush painting (“Hua”). The single-player game is based on the “Four Arts” and has been designed in Adobe Flash for a touch screen display. Users can experience traditional Chinese culture through play, which will help them to learn about key features of traditional Chinese culture and related philosophical concepts. To evaluate the effectiveness of the design, a qualitative methodology was applied for user testing. The results suggest that interactive computer game can help users appreciate and understand aspects of Chinese culture. The open-ended conversations with the participants have provided useful feedback on future design improvements for “The Four Arts”.

Acknowledgement

I would like to thank those who helped me finish this project. Firstly, I am heartily thankful to my supervisor, Erik Champion, an Associate Professor, who has contributed to the field of New Media, with his many articles in books and conferences. It has been an honour to be his Master’s student at the Auckland School of Design, College of Creative Arts, Massey University, Auckland. Likewise, I am grateful to Jack Tong, a coding expert in Xi’an, China, as well as Oliver Xu, a flash expert in Auckland, for their valuable help in relation to the coding aspects of the project. Equally appreciated is the amazing work on the music in this project which made the games more vivid and enjoyable as composed by Xiyao Chen, who holds an MA degree in music. I appreciate all the contributions made by Peide An, a self-taught expert in Chinese culture and literature in Xi’an, China. Lan Wang, Lecturer of Chinese Literature, at the School of Arts and Social Sciences, Wuyi University Guangzhou, China, helped me gain a better understanding of traditional Chinese culture. Finally, I wish to give my regards and blessings to all those people whose participation in this research made it possible for me to complete the project.

Li (Neil) Wang
# Table of Contents

1 Introduction .................................................................................................................. 8  
1.1 Background .......................................................................................................... 8  
1.2 Significance/Purpose ............................................................................................ 8  
1.3 Aim ....................................................................................................................... 9  

2 Literature Review ...................................................................................................... 10  
2.1 A brief review on some important aspects of traditional Chinese culture ...... 10  
2.1.1 Daoism ........................................................................................................ 10  
2.1.2 Confucianism .............................................................................................. 11  
2.2 What people think about traditional Chinese culture ......................................... 11  
2.3 The Four Arts of China ...................................................................................... 12  
2.3.1 The Art of Qin (Music) ............................................................................... 13  
2.3.2 The Art of Qi (Go) ...................................................................................... 15  
2.3.3 The Art of Shu (Calligraphy) ...................................................................... 16  
2.3.4 The Art of Hua (Painting) ........................................................................... 17  
2.4 Touch screen and digital technologies on promoting Chinese cultural heritage 18  
2.5 Research questions ............................................................................................. 19  

3 Methodology .............................................................................................................. 20  
3.1 Qualitative Research literature ........................................................................... 20  
3.2 Case studies ........................................................................................................ 21  
3.2.1 Case study: “Zon” ....................................................................................... 21  
3.2.2 Case study – CCTV “Ink” ........................................................................... 23  
3.3 Interactive Game Design .................................................................................... 27  
3.3.1 Interactive Technologies ............................................................................. 27  
3.3.2 Interface Design .......................................................................................... 27  
3.4 Summary ............................................................................................................ 28  

4 “The Four Arts" ......................................................................................................... 29  
4.1 Design concept and the structure of the games .................................................. 29  
4.2 Graphics .............................................................................................................. 30  
4.3 Interface .............................................................................................................. 31  
4.4 Motion Graphic .................................................................................................. 33  
4.5 Development Specifications ............................................................................... 34  
4.6 Music .................................................................................................................. 37  
4.7 Implementation of the game design ..................................................................... 37  
4.7.1 The game design of “Qin” (Music) ............................................................. 37  
4.7.2 The Game Design of “Qi” (Go) .................................................................. 41  

- 4 -
Table of Figures

Figure 1. A scholar is playing Guqin (zither), finds he is part of nature ................................................................. 13
Figure 2. Two scholars are playing Qi (Go) .............................................................................................................. 15
Figure 3. An art work of calligraphy by the famous Song Dynasty calligrapher ‘Huang Tingjian’.......................... 16
Figure 4. A sample of Chinese ink painting ........................................................................................................... 17
Figure 5. A screenshot of the game scene during the play ....................................................................................... 22
Figure 6. A mini game of “New Year Fortune” which is part of the “Zon” game ....................................................... 23
Figure 7. Screen shots of the “Ink” – CCTV commercial .......................................................................................... 25
Figure 8. Screen shots of “Making of Ink” which demonstrate methods used to create the TV commercial ......... 26
Figure 9. The flow chart that illustrates the structure of the games ......................................................................... 30
Figure 10. The background of the game scenes, taken from the still frames of the video footage .......................... 31
Figure 11. The design of the interface .................................................................................................................... 32
Figure 12. A screen shot from an introduction movie ............................................................................................. 33
Figure 13. A screen shot of the Qin game interface .................................................................................................. 35
Figure 14. A screen shot of the coding section of the Qin game development .......................................................... 36
Figure 15. The instruction for game play in “Shu” (Calligraphy) (cropped for improved legibility) ....................... 38
Figure 16. When the player hits the “Gong” correctly, the animation of the element of “Earth” moves upwards ...... 38
Figure 17. When the player hits the “Shang” correctly, the animation of the element of “Metal” moves upwards .... 39
Figure 18. When the player hits the “Joe” correctly, the animation of the element of “Wood” moves upwards ....... 39
Figure 19. When the player hits the “Zhi” correctly, the animation of the element of “Fire” moves upwards ........... 40
Figure 20. When the player hits the “Yu” correctly, the animation of the element of “Water” moves upwards ....... 40
Figure 21. When the player hits the string incorrectly, an animation of an ink splash moves downwards ............ 41
Figure 22. The logical structure of the first battle in the Go game ........................................................................... 42
Figure 23. A screen shot of the game play in the first battle .................................................................................. 43
Figure 24. A screen shot of the game play in the first battle (“You win the battle!”) ................................................ 43
Figure 25. The logical structure of the second battle in the Go game ...................................................................... 44
Figure 26. A screen shot of the game play in the second battle (cropped for legibility) .......................................... 45
Figure 27. A screen shot of the game play in the second battle (cropped for legibility) .......................................... 45
Figure 28. A screen shot of the game play in the second battle (cropped for legibility) .......................................... 46
Figure 29. A screen shot of the game play in the second battle (cropped for legibility) .......................................... 46
Figure 30. An instruction for game play in “Shu” (Calligraphy) (cropped for legibility) .......................................... 47
Figure 31. Instruction for game play in “Shu” (Calligraphy) (cropped for legibility) .................................................. 48
Figure 32. “Shu” (Calligraphy) – at the beginning of the game ................................................................................ 48
Figure 33. “Shu” (Calligraphy) – the player can choose the word he/she wants to learn about ................................. 49
Figure 34. “Shu” (Calligraphy) – the player needs to select the path of the evolution of the character, and to click the “DONE” button to see the result ............................................................... 49
Figure 35. “Shu” (Calligraphy) – the player can see the result, and click the “WRITE” button to write the character he/she has just learnt ................................................................. 50
Figure 36. “Shu” (Calligraphy) – the player needs to click the “WATCH” button to learn how to write the character from a short animation .............................................................................. 50
Figure 37. “Shu” (Calligraphy) – the animation shows the player how to write the character with the “rich grid”, and then he/she can press the “WATCH” button to learn again, or the “START” button to write the character on his/her own .................................................................................................. 50
Figure 38 “Shu” (Calligraphy) – the player starts writing, and is given a clue where to start .................................. 51
Figure 39. “Shu” (Calligraphy) – after finishing writing, the player can press the “DONE” button to see the result ............................................................. 52
Figure 40. The illustration of how the game has been constructed ........................................................................... 53
Figure 41. A screen shot of the game play in “Hua” (Chinese ink painting) – when the game starts, the “canvas” will move from right to left ................................................................................... 54
Figure 42. A screen shot of the game play in “Hua” (Chinese ink painting) – when the player waves the “brush” and is correctly following the music, the ink paint appears ................................................. 54
Figure 43. A blossomy peony indicates a good result .............................................................................................. 55
Figure 44. A bud of a peony indicates an average result .......................................................................................... 56
Table of Tables

Table 1. The demographic details of the participants ................................................................. 58
Table 2. The participants’ answers revealing the memory recall .................................................... 59
Table 3. Ratings of the “Enjoyment” of the game play ................................................................. 61
Table 4. Ratings of the “Usability” of the game design ............................................................... 63
Table 5. Ratings of the “Graphics” of the games ........................................................................ 64
Table 6. Ratings of the “Cultural Authenticity” of the games ...................................................... 65
Table 7. Overall rating of each criterion for each game given by all the participants .................. 66
Table 8. Overall rating of each criterion for each game given by the Non-Chinese-speaking group 67