



What Drives Female Players' Continuance Intention to Play Mobile Games? The Role of Aesthetic and Narrative Design Factors

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Abstract. Many scholars have suggested that video games predominantly target at male players. However, with the proliferation of mobile games in recent years, evidence shows that the gap between male players and female players are closing. Report from Entertainment Software Association 2015 indicates that Women (48%) and Men (52%) play video games in approximately equal numbers. Therefore, it is very important to pay more attention to female players' preferences and design mobile games for them. Compared with male players who prefer more complex and competitive games, female players exhibit less dedication and skill with respect to gaming. Yet, research on mobile games generally ignore the female group and the female-orientated game design factors. To fill this gap, this study identifies the aesthetic and narrative game design factors and investigate how these design factors influence female players' continuance intention to play mobile games. Focus group discussions were conducted to explore the aesthetic and narrative design factors they preferred. Our findings provide suggestions for future female-orientated game developers regarding the aesthetic character design and narrative design, thus help them to retain and attract more female game players, improve the overall experiences, gain a broader market, and improve their profitability.

Keywords: Mobile game · Female players · Aesthetics · Narrative · Continuance intention

1 Introduction

Many scholars have suggested that video games predominantly target at male players [7]. However, with the proliferation of mobile games in recent years, evidence shows that the gap between male players and female players are closing [3]. Mobile games specifically targeting female players are gaining popularity and the number of female game players is rapidly growing. As a result, report from Entertainment Software Association 2015 indicates that Women (48%) and Men (52%) play video games in approximately equal numbers [3]. In mainland China, female made up 53% of all mobile game players in 2013 [16], while the mobile game design remains male-centric and unfriendly to female players [2]. Compared with male players who prefer more complex and competitive games, female exhibit less dedication and skill with respect to

gaming [12]. Yet, research on mobile games has generally ignored the female group and the female-orientated game design factors. To fill this gap, this exploratory study identifies the aesthetic and narrative game design factors and investigate how these design factors influence female players' continuance intention to play mobile games.

Different from male-centric games, female-orientated games pay more attention the aesthetic and narrative design. Aesthetic refers to the perceived visual appeal of a digital character in mobile games [1]. Many female players consider the visual appeal (e.g., clothes, shoes, and hats) of a character and aesthetics (e.g., background skins) of a game as very important for them to keep playing a game. For example, the Chinese mobile game "Love and Producer" attracted 7 millions of players within one month after launched in December 2017, with females representing 90% of the downloads [8]. Love and Producer is a dating simulation game for mobile, which lets players develop romantic relationships with one of the anime boys shown in Fig. 1. The male characters in the game are good-looking and dressed appropriately in different occasions. The visual appeal is very bright, fresh, soft, and natural.

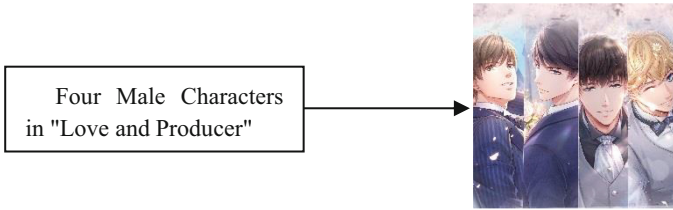


Fig. 1. Male Characters in Love and Producer (Source: <https://supchina.com/2018/01/16/>)

Additionally, an engaging narrative is provided. Female players are allowed to interact with the male characters in various ways. Players are able to date with male characters in different scenarios and have conversations with a particular male character in the game anytime, with customized responses from them (e.g. Figure 2). After launching, "Love and Producer" became successful immediately. Its monthly revenue in January 2018 surpassed \$31 million [4].

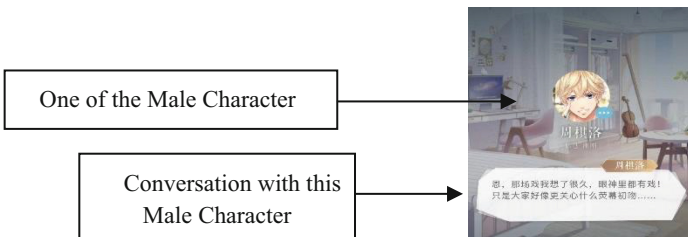


Fig. 2. Interaction with Character in Love and Producer (Source: <https://supchina.com/2018/01/16/>)

Inspired by the game love and producer, this study seeks to investigate what drives female players' continuance intention to play mobile games, focus on the role of aesthetic and narrative design factors. An interview with 8 female mobile game players was conducted to explore the aesthetic and narrative design factors they prefer. Based on the interview conclusions, we provide suggestions for future game developers regarding the aesthetic character design, visual appeal design, and narrative design, thus help them to retain and attract more female game players, improve the overall experiences, gain a broader market, and improve their profitability.

2 Literature Review

2.1 Differences Between Male and Female Players

There is a big gap between the needs of female players and those of male players. First, females are more sensitive to information compared with males. Nii Yasuyun, a well-known expert in Human Sciences states: "In general, men are better at spatial cognition, while women are better at language and nuance." Female's aptitude for language makes them more susceptible to information in mobile games. Second, females pay more attention to details, such as whether the picture of the game is exquisite in details, whether the color collocation is reasonable, and whether the design of the role is exquisite and beautiful, which further reflects that they are very sensitive to information. Third, female are more emotional in their way of thinking, so they can be attracted by narrative design more easily. For example, in childhood, most girls like to play *playing house*, they play different roles in the family and get emotional satisfaction by interacting with other members of the family. Boys like the exciting game such as horse riding and fighting, but girls prefer narrative games. Love and producer is designed as a love forming game with rich storyline, which gains instant popularity among female game players in Mainland China. In the game, players can interact with four male protagonists, with the increased time devoted to the game and upgrade of game level, the plot will be further developed. The prevalence of Love and producer indicates that females are more sensitive, they prefer to indulge in fantasy and ideal world. Therefore, if the game designer intends to better retain female players, he/she should better understand contemporary women, and find the design factors that can trigger their fantasy, and improve their game experience. In general, male players care more about the competitive and technical aspects of the game, they want to get a sense of excitement and conquer difficult challenges while playing games. On the contrary, female players pay more attention to aesthetic and narrative design, they want to relax themselves and have a better emotional experience during game playing.

Female players prefer the aesthetic and narrative design factors in games not only because they have unique emotional characteristics, but also because their purpose of playing games differ from male players [15]. Most female players focus more on entertainment and emotional communication, hence, they may not pay too much attention to numerical achievements such as the attack power of characters in the game and the experience gained in each game. Our questionnaire also proves this point.

Therefore, aesthetic design and narrative design must be considered in order to bring better visual experience, participation and satisfaction to female players.

2.2 Aesthetic

Beauty is a psychological feeling that people can fully experience and enjoy. Beauty could affect people's emotions from the appearance, environment and moral aspects [9]. Aesthetic design is an applied science. An aesthetic feeling is enjoyable, which could be stimulated by colors, textures, lines, and shapes [18]. Mobile game consists of comprehensive elements such as music, art, film, literature and so on. While playing games, players will be attracted by the view point of the screen at the beginning, following by the fun of game play, and finally by the experience of virtual aesthetics [5]. A game with better visual appeal will provides players with better aesthetic experience. Therefore, an attractive video game must be capable to incur aesthetic experiences in different ways, e.g., character model design, map details, action effects, magic effects and so on. For example, in the game, costume is the soul of the game character design. Many female players like to change costumes for game characters, which gives the character a fresh feeling, makes it more enjoyable to play a game, and eventually affect their intention to continue game playing.

2.3 Narrative

Scholars argue that the whole process of a game is consisted of a series of problems and events to be solved by the players. Therefore, this process can be treated as narrative [11]. For example, On December 6, 2017, Hit-point, a Japanese game company, launched a game *traveling frog*, which became the Top 1 free game in the App Store within two months. The protagonist of the game is a cute little frog, players can give it a name, buy presents like food, lucky charm, and props for it, the frog will have a trip to different scenic spots with these presents, and then it will bring some local specialties and postcards back for their caregivers (the players). Many female players were addicted to the game and posted pictures of their frogs on their social network sites. The narrative of *traveling frog* (process of raising frogs) can arouse players' maternal feelings, which is very distinctive [13].

3 Methodology

In this study, we employed the focus group discussion method. We recruited eight female players who had played at least one mobile game, and then assigned them to two groups (four players in each group). The group is "focused" on the mobile game experiences [14], leading to the development of a theoretical understanding of cognitive, behavioral, situational, and environmental factors in this context [6]. All participants met the focus group moderator in the same room, participants in group 1 were invited at first and then group 2 members [7]. Before the discussion, all participants were asked to provide their demographic information (see Table 1). Each discussion lasted for one hour, discussions were moderated by the same instructor. During the discussion, we

asked six questions in the brainstorming discussion: (1). Which mobile game do you play? Why do you play it? (2). While deciding whether continue to play a mobile game, which factor you care about most? (3). Do you prefer games that have a rich storyline? (4). Would you play a game because of its graphic design, character design, costume design, etc.? (5). Do you buy skins or props to dress up your favorite characters? (6). Why would you like to dress up a character? Based on participants' approval, the moderator recorded the discussions. Next, we sorted and categorized their answers.

Table 1. Participant demographics

Group No.	Participant ID	Gender	Age	Frequency of playing per week	Average duration of play	Favorite game	Focused factor
1	1-A	F	21	Everyday	4–5 h	Happy elimination	The plot design (N)
	1-B	F	21	Everyday	1–2 h	Onmyoji	Game scene Design(A)
	1-C	F	21	Twice per week	3–4 h	Thrill battlegrounds	Game scene Design, Operation design(A)
	1-D	F	22	Everyday	2–3 h	Thrill battlegrounds	Operation design(A)
2	2-A	F	20	Everyday	2–3 h	Honor of kings	Operation design(A)
	2-B	F	23	3 times per week	1 h	Thrill battlegrounds	Character design(A)
	2-C	F	21	Everyday	1–2 h	Love and producer	The plot design (N)
	2-D	F	22	Everyday	2–3 h	Honor of kings, Thrill battlegrounds	Character design(A)

4 Results

4.1 Aesthetic

Based on the answers from participants, we extracted three aspects of aesthetic design factors that female players care about most: character design, game scene design, and operation design.

Character Design. The design of game characters is very important. Game characters are the protagonist in the game world, they are usually the first object depicted by a game construct [17]. Players are able to select a game character to represent themselves and interact directly with other characters, which makes them more willing to continuously play the game in the future. Participant 2-B said, “Playing thrill battlegrounds

takes up most of my game play time, the critical reason is that I can play with my friends, which may improve my playing experiences. As for my personal preference, I will love this game even more if they can beautify the game characters and design more beautiful clothes. I hope I can change different kinds of clothes for my character in the game, and I want to be distinctive.” Participant 2-D added, “The design of characters and the skin of characters are what I care most about, and I have bought a lot of skins (e.g. Figure 3) for my favorite game characters.”



Fig. 3. The character and its skin in Honor of kings (Source: a game screenshot provided by Participant 2-D)

Game Scene Design. Game sense design refers to all object modeling design, such as game scenario design (e.g., flowers, mountains, rivers, or trees in the game environment) [10]. Participant 1-B said, “The key reason I like Onmyoji is that its interface is very delicate and designed in Japanese comic style.” Participant 1-C said, “If a game graphic design is particularly rough, then my experience of playing the game will be very poor. The game scene design of Thrill battlegrounds is very authentic and vivid. For example, every blade of grass on the ground is very vivid. In the snow mode, the sound that the characters walk on the snowfield is almost the same with natural sound.”

Operation Design. Operation design enables players to interact with the game environment (e.g., game characters). Compare with a game that is difficult to manipulate, female players prefer cool operating interfaces and functions, such as effective visualization of attack. Whether the operation design is cool influences female players' game experience. Participant 2-A said, “The most important reason that I don't play Thrill battlegrounds is that the interface is not cool enough when attacking, so it could not attract me.” Participant 1-D added, “Because the operation is complex, when I play Thrill battlegrounds with my friends, I can only carry out simple attacks and cannot constitute high damage.”

4.2 Narrative

Narrative design of the game mainly refers to the plot settings in the game. Among existing mobile games, narration design generally follows two methods: (1) the storyline cannot be changed. Regardless of the player's choice and operation, the storyline can only develop in one predefined direction eventually; (2) the storyline that can be

changed. Depending on the player's choice, the story could be re-developed and goes to different directions. In this case, the players perform as a narrative creator rather than a passive receiver. Participant 1-A said, "There are various types of elimination games in the APP store now, but I prefer the one with a storyline, which is not too boring." Participant 2-C said, "I've been playing *Love and Producer* for a year, and I usually spend one or two hours every day on the game. In the game, I met Xu Mo (a hero in the game) and fell in love with him. Every step of the story development impressed me deeply." Participant 1-A added, "I like playing *Love and Producer* too. Because my story in the game is not exactly the same as others, the result becomes different because of our different choices, that's why I like it." Results of focus group discussion indicate that, among similar games, female players prefer those with detailed and editable plot design.

5 Discussion

The number of female mobile game players is increasing rapidly, who have different preferences on game design factors compared with male players. According to our focus group discussion, we find that female players paid little attention to improve their fighting skills and complete complicated tasks. On the contrary, they focus more on narrative design and aesthetic design factors of games, such as game scene design, character design and operation design. For instance, participants in the group discussion frequently reported two favorite mobile games: *Glory of Kings* and *thrills battlefield*, and 5 participants like them. Their discussion about these two games support that female players pay more attention to the aesthetic design. For example, participant 2-D said, "Compared with *thrills battlefield*, the character design of *Glory of Kings* is more delicate and beautiful. According to the current universal world view, the designer positions the roles and designs heroes with different attributes, such as Su Daji is sexy, has strong explosive force and weak vitality. In terms of characters' skins, the design is also very delicate and pretty. For example, the outfits for Su Daji are sexy, and the movements and special effects of her fighting skills will change when the skin changes, which makes the game more diverse and flexible."

The future of female mobile game market is promising. In order to attract more female users, game designers should better understand female players' preferences. First, designers should pay more attention to the aesthetic design in terms of character design (e.g., provide diverse characters, emphasize details of characters), game scene design (allow players to adjust the game scene according to their own preferences, such as background colors), and operation design (e.g., enhance the visual effect of attack). Besides, the designer should be aware that female players' operational skill is relatively weak, thus they should simplify the operation as much as possible without reducing the entertainment of the game. Finally, designers should enhance the narrative of the game, as interesting plot can help a game to attract more female players. We hope above suggestions are useful for game designers to retain and attract female players, further expand its player base, improve its profitability and sustainability.

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