Controlling Your Game Controls: Interface and Customization

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Abstract

A game's interface is where players communicate with the game, so it has intrinsic importance to players. As player interactions in a game get more advanced, so does the complexity of the game interface. Massively Multiplayer Online game (MMO) interfaces are at the top of the complexity pyramid as they can display plentiful information such as character skills, stats, maps, chat windows. As the interface gets more complex, so does the merits of customizable interfaces. This paper reports results from a study which investigated the importance of interfaces and interface customization for MMO players using an online mixed method survey. Results validate that interface quality is important for players and interface customization is a desirable feature for player engagement and motivation to play MMOs. Further results are discussed in the paper.

Background

"I enjoy customizing the interface to maximize usability and provide information that's useful for improving gameplay." – (M117, WoW) [1]

In games, as with all products, usability is a top priority. Interface design has a large impact on a game's usability, and hence its playability. Just as people are less likely to use a mouse that gives them arm pain, they will shy away from headache interfaces. The quality of the game interface affects players' gaming experience as it impacts a game's playability.

The results of several studies on student control in Computer Based Instruction(CBI) point to positive effects of this control on elements of instruction (e.g., Corbalan, Kester & van Merrienboer, 2006; Kinzie, Sullivan & Berdel, 1988). Theories such as Flow theory (Csikszentmihalyi,1990) and Self Determination Theory (Deci & Ryan,1985) also point to the importance of user control for enjoyment and motivation. Still, while theories and CBI research exist implying that customization may lead to identification and ownership, and is related to motivation and achievement, research examining specific uses and effects of various types of customization in games is lacking.

Many games, especially massively multiplayer online games (MMOGs), offer players ways to customize their experiences, either through built-in options or the ability to create or obtain add-on software modules. This ability to customize allows players to personalize their avatars/characters and control aspects of their play experience. Doing so could lead to players identifying more closely with a game and "taking ownership" of it.

In this study, we decided to work with massively multiplayer online role playing games (MMORPGs) because of their complex systems and range of choices that they provide to players. MMORPGs are persistent, networked, interactive, narrative environments that support large numbers of people, either synchronously or asynchronously. MMORPGs allow players to

move and interact in simulated realistic or fantasy environments through their game characters (or avatars). These features enable players to experiment in these simulated worlds.

Four games were used in the study reported here. These games were Blizzard's (2011) *World of Warcraft* (WoW), NC Soft's (2011) *City of Heroes/Villains* (CoX), Turbine's (2011) *Lord of the Rings Online* (LotRO), and *Dungeons & Dragons Online* (DDO). All belong to the same genre of digital games, MMORPGs. However, they belong to different sub-genres. WoW has a fantasy setting, taking place in the elf and dragon inhabited world of Azeroth. We chose WoW because it is the most popular MMO with over 10 million players. CoX has a superhero theme, with super heroes and super villains going about their extraordinary activities in Paragon City. We chose CoX because it has one of the most flexible avatar appearance customization tools among MMOs. LotRO is an MMO based on the books by J.R.R. Tolkien. Before the game was released, two visually spectacular movies were shot. We chose LotRO for the study because of its high avatar body customization, and also because it has far more narrative and solo content than the others. DDO is, as its name suggests, an online version of the popular pencil and paper RPG, Dungeons and Dragons. We chose DDO because it is a popular Free-to-Play game, which is a category we think worthwhile to investigate.

All four games have similar mechanics, allowing players to create and evolve characters. However, the degree of user control in various areas differs greatly. For example, the user control during character creation in CoX is widely acknowledged as among the most flexible in the field of gaming. Every body part can be colored to the user's preference, and most parts can have a variety of textures applied to them (e.g. scales and metallic shine). Control over height, weight, race, build, and skin color make LotRO the most body customizable game in our set, and cosmetic costumes make it a close second to CoX in the clothing customization area. After the initial steps when beginning the game, WoW has far greater options. It allows for massive customization of the interface. It supports user created addons (or mods) and macros. There is a wide variety of gear to choose from for characters to wear, though the appearance of that gear is not customizable as it is in some games. Finally, "re-speccing," the act of resetting the talents (or in the case of CoX, power sets) of characters is much more easily accomplished in WoW.

This paper reports results of a survey study with WoW, CoX, LotRO and DDO players regarding the importance of interface quality and interface customization (we will refer to WoW/CoX/LotRO/DDO as 'the game' or 'their game' while talking about these games in the rest of this paper). These results are a subset of a larger study about motivational and engaging effects of customization in MMOs, and how these factors are related to each other. In this study, the following operational definitions apply:

- Motivation is the desire of a player to come back and play a game repeatedly.
- Engagement is the state of mind that keeps a player playing during a given session.
- Enjoyment, perhaps the most subjective and elusive to define, is defined as having fun and being satisfied with doing an activity.

While doing that, we group customization into 3 broad categories (Turkay & Adinolf, 2010):

> Type I: Customization that affects game mechanics and dynamics directly, therefore, has a direct effect on players' game play. Customizing talent trees in WoW is an example of this type of customization.
>
> This type of customization mostly effect how player character can do in the game and may closely related to control of the character.
>
> Type II: Customization that does not affect game mechanics and dynamics. Avatar customization is an example to this type of customization. Although this type of customization is not directly affecting game play, it may affect players' enjoyment of the game.
>
> Type III: Customization that does not affect game mechanics and dynamics directly but may affect player performance, therefore, may have an effect on players' game play experience. Interface customization falls in this third category.

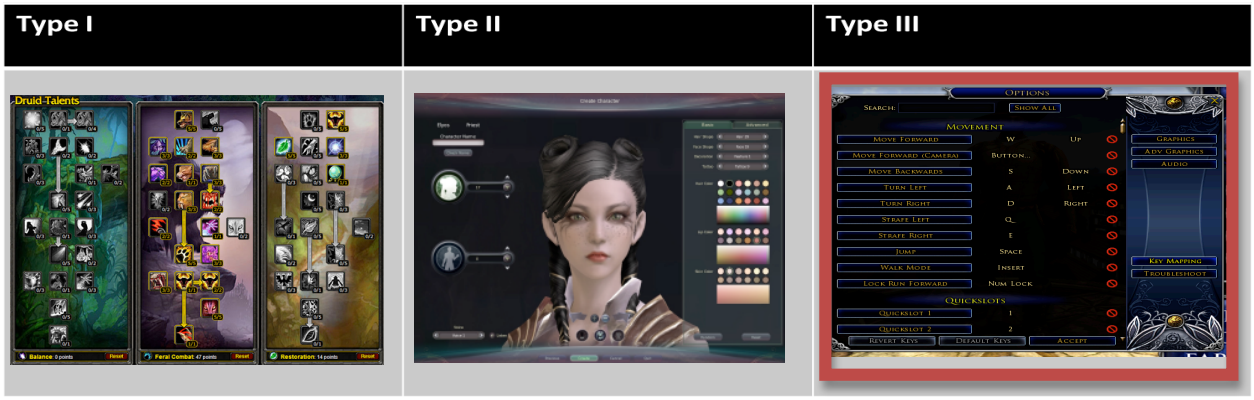

Figure 1. Types of customization in MMOs. Talent tree customization window in WoW, avatar appearance customization window in Aeon, and interface customization window in LotRO.

User Interfaces

When talking about computers, interface can include both hardware and software. The mouse, keyboard, or other controller people use, the monitor they look at, and the speakers they listen to are all interface. At the software level, the buttons they click, the fields they type in, the things they drag around, and the information displayed make up that level of interface. In this paper, we will be talking primarily about software interface, specifically game interfaces. Interface connects the player to the mechanics of the game and it determines the flow of the player experience. For the sake of brevity, we will not talk about the relationship between gameplay and interface but instead we refer the reader to Juul and Norton (2009)'s piece where authors talk extensively about the close relationship between gameplay and interface examining various games.

A game's interface can include passive components, usually informational displays, and active components, game controls. For example, on the interface of Pong, the score board is passive, while the controls to move the paddle up and down are active. Counterstrike, a first person shooter (FPS), has a slightly more complicated interface: Players control the view and their aim by moving the mouse; they can make their character walk, run, crouch and jump using the keyboard; and they can shoot by pressing their mouse button. There's also more information: Life, armor, time remaining, hostage meter, money, and ammunition. As the interactions and number of game assets to control or pay attention increase, the complexity of the interfaces also increases. As we move towards more complex interfaces, MMORPGs occupy top levels of complex interfaces pyramid. For example, WoW interface can have dozens of buttons, and hundreds of pieces of information. Below is a screen capture from WoW raid group.

As we move from Pong interface to FPS, players are given the chance to alter movement controls to suit their style, but the all the information you need is displayed at all times. In many MMOs, players have potentially dozens of abilities to assign controls to and have items they can acquire with active abilities that they need to assign to controls. There are numerous attributes of a player's character, and his/her interactions with the world, which a player may or may not be interested in seeing displayed.

As the level of complexity of interactions goes up, so does the possibility of cognitive overload. Attempting to process all the information on the interface may slow players' reaction time.

One way of dealing with or easing the effect of cognitive overload might be to allow players or games to customize the interface. The latter approach is often called a personalization or system driven customization (Blom & Monk, 2003). We will talk about user-driven interface customization which gives players option to control how their game UI will look and how they will interact and control game features through key bindings.

Figure 2. **A cluttered World of Warcraft interface.**

Customization and User Control

Emerging technologies such as mobile phones, web portals, and games introduced broad possibilities for customization. Customization is about providing direct control of a system to the user. Studies on customization have included the appearance customization of mobile phones (Blom, & Monk, 2003), web portals (Sundar & Marathe, 2010), avatars (Vasalou & Joinson,

2009), and user interfaces (Findlater & McGrenere, 2010). Customizable systems give high priority to user control and involvement, and essentially make users the sources of their interaction with systems (Sundar, 2008). According to Sundar's (2008) agency model of customization, customizable options imbue users with a strong sense of agency and allow them to spell out personal preferences on interfaces. Today, most interfaces offer some sort of customization possibilities, ranging from simple font or color change on desktops and Web pages to more involved modifications (mods) in videogames.

When people customize, they basically make choices among given options. A large body of research suggests that providing individuals with choices leads to better performance and more intrinsic motivation when performing tasks as well as more overall satisfaction. Making choices also increase sense of control and persistence (Cordova & Lepper, 1996).

Sense of control/perceived control is related to many positive outcomes such as achievement, persistence, motivation and self-esteem (Skinner, 1996). It is proposed that because of the association of control with confidence, control promotes engagement and therefore fosters learning (Hedman & Sharafi, 2004). Self Determination Theory (Deci & Ryan, 1985), a meta-motivation theory, also suggests that autonomy is crucial for people's motivation, implying that if people feel control over an activity, they will feel more motivated to come back to do the same activity.

Three types of control that are relevant to games are decisional, cognitive and behavioral control (Averill, 1973). Decisional control was defined as the ''…range of choice or number of options open to an individual'' (p. 298). Increasing the number of features to customize in a game can increase decisional control. However, decisional control may decrease if the numbers of possible choices are increased too far. Players may feel unsatisfied (Schwartz, 2000) and too many unrelated choices may disengage users (Iyengar & Lepper, 2000). However, this may not be as detrimental since players usually are given options to re-do things. For example, in WoW, users can specialize in a certain skill such as healing or damage. If the user decides to choose a skill on their talent trees that will not be useful for their specialty, they can always re-do it through "re-speccing" their talents (and paying some in-game money).

Behavioral control is defined as ''direct action on the environment'' (p. 286). Being able to control game assets such as player character is related to behavioral control. Cognitive control deals with the ''interpretation of events'' (p. 286). A game's interface may affect cognitive control since it provides information for play. Assuming that media redundancy is managed on a game interface, increasing the number of assets on an interface may increase cognitive control as it provides more information about the state of the game play. Increasing the number of features on the game interface can therefore either support or undermine the players' sense of control. MMOs in particular require interpreting several pieces of information at the same time, so many user interfaces may look like the one shown in Figure 2. Therefore, it may be useful to allow players to choose the information they want to display on their game interface and how they want to display it. All three types of control can be manipulated through giving players different ways to customize their interface and game controls.

Interface Customization (Type III)

Customizable systems allow users to make changes to the form and content of interfaces. Hsu & Chen (2009) suggested that customizability should be design criteria for both passive and active parts of videogame interfaces. In fact, for many applications, interface customization is

one of the most common types of customization and it can be also categorized into surface level customization and deep level customization (Bentley & Dourish, 1995). Surface level customization allows users to change cosmetic features from pre-given options. Deep level customization may require integration of external programs such as add-ons. WoW is unique among MMOs, allowing players to integrate mods which can change their game interface and may affect players experience with the game. This makes add-ons an important part of WoW players' game experience. There have been countless mods created, many of which are now widely used. Web sites like *www.curse.com* feature hundreds of mods for different purposes. In addition to using mods, creating them is also a popular practice among WoW community. In fact, to promote this practice, joystiq.com selects the best WoW UI each week out of tens of mods uploaded by players and announces the winner on their website. Because of their flexibility, adaptable interfaces can provide enjoyable experiences for players both at the level of customization and as a result of customization. The malleability of WoW UI provides players with more freedom to play their game and change it. This allows opportunities for players to create their own style interfaces which will increase the sense of belonging to the game.

Unfamiliar and complex interfaces may result in frustration and cognitive overload in MMOs (Ang, Zaphiris & Mahmood, 2006). Interface customization may allow players to manage and process information by allowing a closer match between users' cognitive resources and the cognitive demands of their gameplay experience.

To sum up, previous studies indicate that interface customization can be important to game play as it can provide attractiveness and functionality, as well as familiarity and ownership. The following section explains data collection methods, participants and data analysis.

Methodology, Participants and Data Analysis

A mixed survey method was used to collect data from online forums through snowball sampling. These forums were public and private WoW guild forums, and the official CoX, LotRO and DDO forums. Participation was voluntary and participants did not receive any payment or other compensation for their participation. The surveys asked questions about participants' demographic information. This included: age and educational background, their game characters, play styles, their enjoyment of game play based on different game features, their motivations to play, and the game features that they would like to customize.

As part of a larger survey, we asked four Likert scale and 2 open-ended questions regarding interface, motivation, engagement and interface customization (in the findings, we will refer to "4" in the Likert scale as "moderate extent" and "5" as "large extent".) Using ranges (e.g., 18 to 21 or 50 and over), participants indicated their age. Results show that participants ages ranged from 18 to over 50, with the largest percentage being between 26 and 30 years of age (21.1%). 20.1% of the respondents were between ages 21 and 25. This reflects almost identical trends when compared to existing data (Yee, 2006). We found out that some people who log on to gaming forums are former players, so we did not limit participants to current game players.

We also wanted to know whether the importance of interface on player engagement and motivation and effect of interface customization is different for expert players than the general population[3]. This combination of questions and their results then formed the basis of categorizing players into experts and others. Specifically, we gathered data on player expertise with four main

questions: the number of months they played/have played the game being surveyed, the average number of hours they spent/spend playing this game, the level of knowledge they think they had about WoW/CoX/LotRO/DDO (from very low to very high – 7 levels), and the level of their characters. We defined expert players as those who played more than 20 hours a week, who played/have played the game for more than 2 years, who reported their knowledge of the game as "high" or "very high" and who had a game character of the highest level. Based on these criteria, we ended up with 100 expert players among our participants.

We analyzed the survey data using the quantitative data analysis software SPSS 17.0. Qualitative data (open ended questions) were analyzed with Nvivo 8, using inductive codes. Specifically, open ended questions were read several times by the author to identify themes and categories. In order to test for differences across the four games, analysis of variance (ANOVA) was performed, and differences between males' and females' responses were analyzed by an independent t-test.

There were 871 participants (129 female, 742 male). Out of those, 500 were WoW players (83 female, 417 male), 198 were CoX players (27 female, 171 male), 92 were LotRO (10 female, 82 male), and 81 were DDO (9 female, 72 male) players.

Findings

Findings indicate that interface customization is related to sense of control. As a male WoW player puts it, "Interface affects the core mechanics of the game, so flexibility here is desirable to allow for a player to process game information and interact" (M397). This is relevant to cognitive control. As related to behavioral control another WoW player states, "Interface customization: I like it when I can choose how am I going to control my character" (M172, WoW). Below we will examine the importance of interface for participants' engagement and motivation across gender, age, experience and four games.

Engagement and Motivation

"Interface should be very well designed … it needs to be as usable and customizable as possible." (M427, WoW)

Among all the participants, 34.8% said the interface affects their engagement in the game from a moderate to a large degree ($M = 3.11$). Effect of ability to control game play and effect of interface quality for engagement are correlated significantly ($p<0.001$; $r=0.294$).

The game interface also proved to be important for players' motivation to play the game. Specifically, 63.8% of the players reported that the interface was important from a moderate to a large extent as an influence for them to come back and play the game.

We found no statistically significant difference between male and female players' rating of the effect of interface customization on their engagement or motivation. The same was true for age. This indicates that value of interface quality for player engagement and motivation does not depend on player age or gender. However, ANOVA revealed significant differences between games on how much the interface affects player's engagement in their game. Specifically, WoW players think the interface plays a more important role in their engagement than LotRO ($p < 0.01$; $t = 3.215$) and DDO player do ($p < 0.001$; $t = 3.899$). WoW provides the most flexibility with interface and this might be one reason for their value of interface for their engagement. It seems that the extent of customization ability given to the players to modify certain feature influences how much players think that feature affects their engagement. Another possibility is

that people who value interface control are more attracted to games with greater control. Of expert players, 59% said that usability of the interface is important for their engagement in the game (M = 3.591). This is slightly higher than the general population. One possible reason might be that the interface can allow expert players to fine tune their game-play and allows their game-play to be more efficient.

Customization

"You never get the "perfect" interface. There is always one little thing you want to "tweak". I find it fun to try and reach that ultimate UI." (F604, CoX)

In terms of interface customization, 54.2% of the players enjoy customizing their game interface from a moderate to a large degree. WoW mods[3] can't change the game world, but they do allow users to create modules and interface items to customize their game experience. Mods give WoW players an enormous amount of latitude when it comes to interface customization. This was reflected in our results. Significantly more WoW players than CoX/LotRO/DDO players favored interface customization as an important feature ($p<0.001$). ANOVA revealed significant differences among four game groups in terms of how much they would like further interface customization, $F(3, 868) = 7.834$, $p < 0.001$. Tukey's post hoc analysis test showed that WoW players want to have further interface customization options for their game more than CoX players do ($M_{WoW} = 3.27$; $M_{CoX} = 2.73$; $p < 0.001$). WoW players emphasized how important interface customization is for them in quotes such as: "A customizable interface is very important to me. The ability to move and configure action bars, as well as the ability to have information presented in a specific way, is essential" (M48, WoW). Players of CoX and DDO emphasized their desire for interface customization in open ended questions. Limitations of the interface was an issue for them. The following quote is representative of players' complaints about DDO interface: "…one of the largest features lacking from the game [DDO] is interface customization. The ability to scale the interface for different resolutions would be a great place to start. Being able to look at the downstream functions and customize graphics and sounds and customize the interface for upstream commands would be stellar" (M740, DDO). There was no significant gender or age difference in enjoyment of customizing game interface or desire to further customize the game interface.

90% of WoW players indicated that they use mods when playing the game. In fact, comments like "Mods, I cannot play WOW without an interface add-on" was very common.

Findings show a relationship with importance of interface for player motivation, engagement, enjoyment of customization and further desire to customize interface. For instance, if players enjoy customizing their game interfaces, interface quality is important for their motivation ($p<0.001$; $r=0.513$) and for their engagement ($p<0.001$; $r=0.404$). If players find the interface to be an important feature of the game for their motivation, they want to be able to customize it further ($p < 0.001$; $r = 0.385$).

When we asked what and why players enjoy customizing the most on an open ended question, five main features emerged: avatar appearance – type II (31.2%), talents/super powers – type I (22%), interface – type III (19.2%), character name – type II (10.5%) and character race/class – type I (8.1%). Other responses were more specific, for example, customizations of pets and music. Most stated reasons for interface customization were making game play more effective and aesthetics.

Conclusion and Discussion

"Interface - a game has to be easy to play or it loses my interest." (F295, WoW)

The quality of the game interface affects players' gaming experience as it impacts a game's playability. Challenge is one of the elements that makes games fun and motivating but challenge should not at the level of understanding and learning the game interface.

Complexity of MMO gameplay requires splitting attention among various game events and information displays. This calls for effort to make MMO interfaces more customizable in order to allow players to adjust what they see, and how they want to control their characters and use the given interface. This study showed evidence that interface customization is enjoyable to MMO players and being able to customize game interface and controls may affect players' engagement and motivation.

Another need for customizable game interfaces might be for players with disabilities, like this WoW player states "Customizable interfaces make me happy. I'm colorblind. I really need it most of the time."(M102)

Innovations in new technologies enable users to do several things that they were not able to do a decade ago. Game interfaces and how we interact with games are changing as new technologies like touch screens or control-free game systems like Kinect becomes more common place. Flexibility of interface and controls might be crucial for the success of games for these new systems.

Endnotes

(1) Through the rest of this paper, participant identifications are indicated as (M#, Game) or (F#, Game). M = male; F = female; # is a participant's identification number on the data sheet; game is the one they filled out the survey for.

(2) Mod or modification is a term generally applied to PC games. Mods are made by the general public or a developer, and can be entirely new games in themselves, but mods are not standalone software and require the user to have the original release in order to run (Sotamaa, 2007).

(3) By general population, we mean the entire pool of participants in this study.

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