UX-Curve revisited: Assessing long-term user experience of MMOGs

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Abstract

In order to fully understand and interpret gamers' behavior it is important that we investigate long-term user experience. When taking such a focus, we shed light on how the user experience and relationship with a system/product evolves over time. Such an understanding is critical especially in the context of Massive Multiplayer Online Games (MMOGs) where gamers usually have a long lasting relationship with the game. In this study we propose an alternative version of UX Curve which is a retrospective method for assessing long-term UX proposed by Kujala et al. Targeted modifications are made along UX dimensions and the method is tested in an empirical study with nine gamers. Findings revealed that this alternative version can be an effective method to document and explain temporality of gamers' experiences.

Author Keywords

Long-term user experience; MMOG; UX curve method; immersion; engagement; ease of use; social interaction, degree of usage.

ACM Classification Keywords

H.5.1 Multimedia Information Systems, *Evaluation/methodology*

Introduction

UX design and evaluation practices are gaining momentum along several fields and market sectors. The growing shift of emphasis from task–oriented and
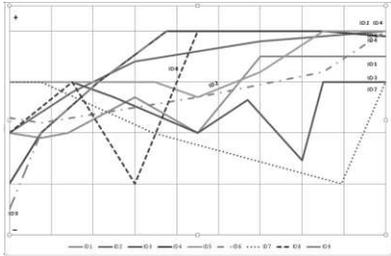
Figure 1. General UX Curve for each user ID
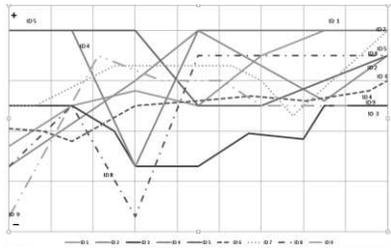
Figure 2. The immersion UX Curve for each user ID

Reason Categories	Positive	Negative
General UX	43	14
Ease of use	41	26
Immersion	43	10
Social interaction	38	12
Engagement	32	10
Total	**197**	**72**

Table 1. Number of reasons for general and specific UX dimensions

functional requirements to non-functional, experiential and hedonic aspects of interaction, is also evident in gaming industry, which is starting to adopt more formal techniques from HCI field to design and evaluate their products [1]. Furthermore, the dimension of time seems to have an enormous impact on the importance we attach to different qualities of the experience with interactive products [2]. Nevertheless most of the current UX evaluation methods are focused on short-term UX whereas only a few published studies are focusing on long–term UX [3]. This shortage of empirical relevant studies is even more intense when concerns the area of computer games (video or online and MMOGs, serious games etc.). This study revisits, adjusts and validates a long term retrospective UX evaluation method in the context of the fascinating field of Massive Multiplayer Online Games (MMOG).

Related Work
There are very few published studies so far that evaluate long-term UX. In a study by Kujala et al. [4] remembered experiences of facebook and mobile phone usage were assessed. It was shown, that changes in long-term UX are related to the hedonic qualities of a product, rather than its pragmatic qualities. Karapanos et al. [5] developed a tool designed for eliciting rich experience narratives retrospectively. The tool was employed in a study on users' experiences with mobile phones. Also Kujala et al. [6] and von Wilamowitz - Moellendorff et al. [7] employed UX-Curve and Corpus respectively in order to measure the remembered experiences of mobile phones usage over time.

It is evident that experiences with mobile phones have gained the attention of the researchers while relevant research on games is rare or anecdotal. Methodologically we see that retrospective methods have been favored against other methods for measuring long term UX. This is because memory is sometimes more important than actuality [8-9] when assessing long term UX. Authors take that view and

therefore the focus of this study is on retrospective evaluation methods, more specifically on the UX curve proposed by Kujala et al. [6].

UX Curve is a retrospective UX evaluation method which can be used to qualitatively investigate user experience and to provide feedback on system/product features and qualities for design purposes. It seems to be a promising method for helping users to remember and document how their experience evolves over the time. To this end, we reflected on this method, and tried to validate it in the context of MMOGs. We developed the appropriate modifications for the UX measurement dimensions and employed the method in an empirical study we set up.

UX curve revisited in the context of MMOGs
Nine students aged between 18-20 years old who had been playing the well-known MMOG "League for legends" for periods ranging from 6 to 16 months (mean: 12.5 months SD: 3.1 months) have participated in our experiment. Participants were given two questionnaires (one for assessing demographic details and another for assessing overall evaluation of the game), and the "curve-drawing session".

In curve-drawing session, six UX dimensions were evaluated through the use of six respective curves: General UX, degree of usage, ease of use, immersion, social interaction and engagement. Besides General UX we selected the dimensions based on the extant literature. Ease of use is selected because it is a more comprehensible (for the gamers) dimension than usability [6]. Degree of usage over time is related to the quality of user experience especially when considered with products and services which are voluntarily used [6]. The above three dimensions were used in the original version of UX Curve. The following are the ones we propose as modifications of the original UX Curve method so as to be more appropriate to evaluate long term UX of MMOGs. Immersion is a very

Reason Categories	Positive	Negative
Usability	6	4
Utility	3	2
Aesthetics	7	0
Gameplay	5	3
Challenge	6	0
Social interaction	7	5
Interest	6	0
Miscellaneous	3	0
Sum	43	14

Table 2. The categories of the reasons for general UX curve

crucial dimension when it comes to games and appears relevant to characterize and measure the somewhat holistic yet important concept of game play [10]. In addition social interaction is vital for MMOGs; social interaction is related with the enjoyment that results from both playing together or watching others play, enjoying the spectacle and sharing comments, and the enhancement of emotional experience that comes from a crowd [11]. Last but not least, we chose engagement. Engagement as the lowest level of involvement, depends on the gamers' willingness to invest time, effort and attention in the game [10].

We found that most students were able to draw the curve quite easily. A total of 54 curves were collected. Most of the curves were improved revealing thus an increasing user experience (a full report of data analysis is beyond the scope of this paper). Figure 1 depicts the general UX and Figure 2 depicts the immersion. In order to draw the curves, students described the factors that improved their experience over time or caused it to deteriorate. Table 1 shows the number of positive and negative factors related to each dimension. When drawing the general UX, gamers gave an average of 6.3 reasons (4.8 positive 1.6 negative N=9). The reasons they mentioned were related to gameplay, usability, aesthetics, game story and satisfaction that comes from playing. Table 2 shows the categories and number of reasons justifying the perceptions for General UX. For the immersion curves gamers gave an average of 3.3 reasons (4.7 positive 1.1 negative N=9). The reasons they mentioned were related to joy, satisfaction, concentration, challenge, and interest.

All except two of "ease of use" curves were improving or stable, with pragmatic-related reasons to be the most frequent. We would like to comment that ease of use had the most negative perceptions most of them related to usability and utilities reasons. Deteriorating curves for social interaction and engagement curves did not affect general UX curve neither were related to user satisfaction. Finally, the degree of usage curves described changes related to factors, such as limited time, school or college obligations but did not reveal long periods of inactivity (i.e. not playing the game).

According to the findings of this study, it is evident that all gamers reporting great likelihood of participation in other similar games drew improving curves. Furthermore, the gamers who were very likely to recommend this game to their friends had mentioned positive factors as well.

Conclusions and future research

Although UX in games is attracting more and more attention among the researchers and practitioners, there are still only few attempts to study evaluation methods especially in long-term UX. Based on a retrospective method for studying long-term UX (UX Curve) we were able to get useful conclusions about UX for a well-known MMOG and the way that UX was changed over time. We run an empirical study with students of a higher education institute and we found out that UX Curve with the appropriate adjustments can be an effective method to describe and explain temporality of gamers' experiences. Findings revealed that immersion increases over time as the general gamer experience does so and that satisfaction lead gamers to recommend the MMOG to their friends and tell positive stories about it. Finally the use of method proved that most of the issues influencing the long-term user experience in a game are related to non-pragmatic issues such as fun [12], immersion [12-15], challenge, interest and control [13]. Future research calls for a deeper experimentation with UX Curve which can be enhanced with some additional dimensions in the context of other types of games such as serious games. In addition it will be useful to conduct a comparative study with other retrospective methods such as DrawUX [16], iScale and CORPUS.

Acknowledgements

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