"How Can I Help You?" Preliminary Studies About User Strategies and Preferences During a Game

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ABSTRACT
Digital games have become very popular and yet there is little study on how gamers learn a game. In this paper, we present a preliminary study in this matter, conducted by means of a survey to investigate gamers' preferences and strategies while playing and learning a game. Participants were also asked about the importance of help systems in games and whether they contribute in the learning process. As results, we observed that help is in fact important, that the ideal kind of help depends on the type of game, and that help must not compromise the gameplay or the fun.

ACM Classification Keywords
H.5.2. Information Interfaces and Presentation: User Interfaces; Training, help, and documentation.; K.8.0. General: Games

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Help; games; learning; gamer strategies

INTRODUCTION
The use of digital games has increased and become very popular, however, there are only few investigations about how gamers[1] learn a game while playing it. According to Iacovides et al. [7], the comprehension about this learning process may help designers and developers to produce games for a wide range of gamers. In this study, we consider that help systems can contribute in this learning process.

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[1]In this paper, players are called *gamers*.

In general, help systems are designed to provide users assistance, embedded in the application, in respect to two aspects: interface and content [10]. The interface aspect includes how the help is presented and if the content matches what the help informs. The major problems reported by users about help systems are related to [10, 15]: *i)* the fact that help systems do not provide the specific information desired; *ii)* help information is not available when needed; *iii)* help information is not accurate or is incomplete; and *iv)* it is difficult to switch between the help system and the application.

These problems can cause user frustration. According to Preece et al. [13], user frustration may happen in many situations, such as when the application does not work, when the system does not provide enough information to enable the user to know what to do, when the error messages are vague, when the user executes a long series of steps to complete a task and after this he/she discovers an error and needs to start over, etc.

Therefore, in the context of games, help systems or game tutorial design should be helpful and intuitive. It must show to gamers what they can do and let them figure out the next steps they should take to evolve in the game. The system must provide gamers with the necessary tools to proceed in the game. Ideally, the system should go unnoticed while showing gamers what they can do.

In the field of HCI, some researches have focused on what makes digital games so enjoyable [5] and how to evaluate game-play experiences [12]. Other researches, which investigate the Game User Experience (GUX), tend to adopt an approach with focus on the specific instances of play in order to understand how to involve a gamer in the game.

In order to investigate how gamers learn a new game, this study tries to answer the following research questions:

1. Do savvy gamers use help in games?

2. Which strategies are used by gamers to learn a new game?

3. Which are the best resources to learn a new game, according to gamers?

We carried out a literature review and a descriptive research over a survey performed with 180 participants. We limit the context of this paper to the preliminary analysis and general findings that indicate whether gamers use help in games and what their preferences are.

This paper corresponds to the initial part of a larger work, which also involves a field study and user observation over a puzzle game. It focuses on understanding the need for help in games and the gamers' perceptions about this.

The remaining of this paper is organized as follows: the next two sections present the literature review and some related works; then there is a section explaining the methodology, followed by another section dedicated to our findings; the last section is reserved for discussion and future work.

LITERATURE REVIEW

During the game, the gamer must face problems and challenges in order to win it, involving aspects such as rhythm, cognitive effort and having fun [6]. Aspects of GUX arise from engagement with games, which differ according to their type (adventure, cards, logical reasoning, etc.) and platform (desktop, mobile, video game). Engagement (or involvement) can be defined according to the level of experience, ranging from low engagement, through engrossment to total immersion, where immersion refers to the sense of being cognitively involved in a game to the exclusion of the outside world [3, 9, 5].

Some researchers have focused on forms of involvement, which is the case of Sweetser and Wyeth [16], who have tailored the theory of "flow" [6] specifically for games with the concept of GameFlow. A gamer immersed in a game is in a so-called state of "flow", as observed in activities such as sports and arts, generating strong engagement and pleasure in people. "Flow" occurs when there is a balance between someone's skills and the challenge presented to them, resulting that they become so engaged in the task at hand that their attention is focused, they feel more in control, they do not feel self-conscious and nor do they realize how much time has passed [6].

According to Sweetser and Wyeth [16], for Gameflow to occur, a game needs to *a)* support gamer's concentration, *b)* provide a challenge that matches with gamer's skill level, *c)* support the development of gamer's skills and mastery, *d)* allow the gamer a sense of control, *e)* provide clear goals and appropriate feedback, and *f)* support the immersion experience. The focus is on game elements which support optimal involvement rather than on the experience of involvement itself [8].

The relationship between Gameflow and immersion is also unclear: gamers are either in flow or they are not, but they can feel immersed to different degrees. When in flow, by definition, one is not monitoring other activities in the environment. But, according to [5], when immersed in a game, other things can be going on that the player is attending to. The authors cite as an example a situation where, in mobile games, the gamer might also be waiting for a bus and thus

actively monitoring the environment. In this case, the gamer is somewhat immersed but not in flow.

Some attention has been paid to the different strategies that gamers employ to overcome the problems they encounter [8]. In this context, game design becomes a matter of fundamental importance to the success of a gamer in a game. According to Rouse [14], to develop a game, designers should be aware that the game should not only be fun for themselves, but also and especially for gamers. It is necessary to develop a game design that meets the gamers' needs, and the fun is one of the main criteria (related to the learning process in a game). In addition, it is necessary to understand how gamers learn a new game in order to provide better help.

RELATED WORK

Some previous works focused on evaluating the involvement of gamers in play and the strategies they use to learn a game.

Cheung et al. [4] state that the "first hour experience", as they call it, is the most important part of a game in the matter of keeping gamers in it. To ensure that line of thought, they present a research with examples of first impression game reviews, done by gamers throughout the world and inputs of their own creation. Through research, they proved that the initial experience of a game is what decides whether a gamer will keep on playing. In Iacovides et al. [8], the authors discuss about the game-play experience and how learning relates to the gamer's involvement. The claims emphasize how gamers experience learning via breakthroughs in understanding, where involvement is increased when the gamer feels responsible for the progress.

Andersen et al. [2] examined tutorials in three games of varying complexity and they verified that tutorial effectiveness depends on the complexity of the game. According to them, one of the key challenges of game design is teaching new gamers how to play, and little is known about how tutorials affect game learnability and gamer's engagement. The authors believe it is important to design early levels in a way to maximize a gamer's ability to experiment and discover game mechanics. A key question is how to facilitate this experimentation while ensuring that the gamer learns how to play without getting frustrated. Their results suggest that investment in tutorials may not be justified for games whose mechanics can be discovered through experimentation.

In Iacovides et al. [7], the authors studied about how gamers achieve breakthroughs in games, highlighting that little is known about this. According to them, gameplay involves overcoming breakdowns and achieving breakthroughs in relation to gamer's action, understanding and involvement. Breakthroughs involve moments of insight where learning occurs which, in turn, can help increase involvement. They explored how gamers try to achieve breakthroughs and identified five strategies that illustrate how gamers learn in games. These strategies are considered in relation to producing playable (support to designers) and engaging games.

Alkan & Cagiltay [1] investigated about the strategies novices adopt when playing a new game. They used the eye-tracking method integrated with a usability study carried out during a

computer game learning experience. They suggested that the main strategies gamers use are "trial and error" and "friends as sources of information". In spite of a hint function providing explicit instruction be available, the authors noted it was never consulted by the participants. However, while the findings suggest that gamers do not always pay attention to information provided by the game, it is unclear exactly what the process of "trial and error" consisted of. In addition, the study only examined a single game so it is also unclear how general these strategies are.

All these works address related subjects to our interest and they were fundamental to understand about learning in games and how gamers use help systems. We continue to further study all these issues with a focus on better comprehension about the needs and how to help gamers to learn games.

METHOD

This is a descriptive research [11] intended to reveal what gamers think about the types of help available inside games. For such, we conducted a survey[2] to ask gamers about their use and preferences about help, as described below.

Most participants were recruited by four researchers during "SBGames 2014[3]", while others received the survey by email. Participants differed in terms of age, gender, game preferences, etc. From a total of 180 participants, 135 were male and 45 were female, with the mean age of 26 years old, ranging from 18 to 54 years old.

The survey was web-based and for those respondents from SBGames 2014, tablets were provided by the researchers, so they could answer the survey right there, with the researchers at their disposal to elucidate any issue. The first part of the survey presents a term of consent which should be accepted by the participant in order to proceed. The survey was composed by 13 questions, 11 of them were close-ended and 2 were open-ended.

Upon completion of the survey, data were cleaned (invalid records were removed) and tabulated. The remaining data were used to perform an exploratory investigation. The results of this investigation and the analysis are presented in the next section.

FINDINGS

For the study presented in this paper, we consider only participants who play games frequently (148 participants). This set of savvy gamers reported their preferred game category as action games (72), followed by adventure (67), strategies (61), RPG (50), simulators (21) and puzzle games (12). Regarding our research questions, the first will be kept open for a while. In respect to the second one, which concerns to game learning and the strategies to learn and interact with a game, participants informed that the most common strategy is "trial and error" (127), followed by "use of tips during the game"
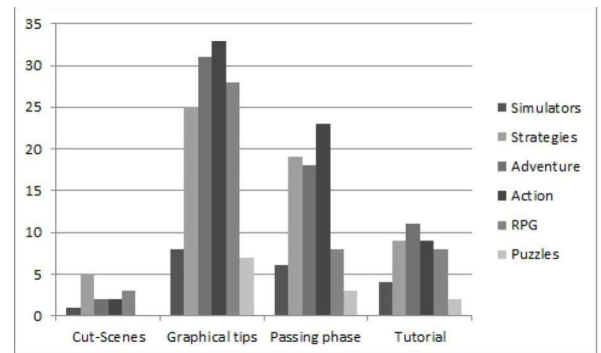
Figure 1. Type of help preferred by gamers

(68), "information available on the Internet" (46) and "use of tutorials" (39)[4].

In its turn, our third research question seeks to gather the gamers' perceptions about which are the best resources to learn a new game. These data are available on Figure 1, which shows what respondents believe to be the best resources to learn how to play a game, along with a correlation with the type of game they told they prefer. We can observe in this graph that graphical tips are considered by most of the gamers as the best way to learn how to play a game. A graphical tip is when the game highlights some element in order to draw the gamer's attention.

We have also analyzed the answers of an open-ended question that asked gamers their opinion about the need of some kind of help inside the games. We categorized 133 positive answers, showing that help is an important part of the game, according to gamers. The direct answer of some was that the help is not necessary, but when describing their opinions, they told that the game must be able to teach the gamer during the play. This "teaching" is also a kind of help, present in graphical tips or passing phases.

We have selected some gamers' testimonies to exemplify these cases. One of the gamers said that *"normally some game design elements are enough to teach the game rules"*. Another said that *"the best case happens when the game elements communicate with the gamers in an indirect way"*. Other gamers reported that the need of help is related to the game type. It was reported by one of them that *"it depends on the game. If it [the game] is something minimalist, it [the help] is not necessary because the play rules are implicit. But if the game offers many different elements, it is interesting to have some non-invasive help (and easily dismissible)"*. According to other gamer the help is necessary *"only in complex games that demand high knowledge about the game schema"*.

Other gamers reported that the game tutorial must focus on the first phases in order to *"teach the gamers to locate all the commands"*. Yet others told some help need to be presented when *"the gamer is locked [in a phase] for a long time"*.

These findings bring us to our first research question, about whether savvy gamers use help in games, and it was unexpected for us to realize they do use help and find it important. With our findings we could identify those preferred kinds of help, and also some scenarios where the help is necessary, even required, according to these gamers.

DISCUSSION AND FUTURE WORK
This paper presented an initial study on how learning happens in practice within the context of gaming. Contrary to our expectations, the data indicate that gamers not only use but also need help resources in games. They get frustrated when they don't know what to do, when there is too much information and when it takes too long to get help from the game. Thus, we argue that game designers should concern on making the help discreet, fun and helpful. We must, however, call attention to the fact that the participants whose answers we analyzed are all considered savvy gamers and, as such, the results cannot be generalized without further investigation.

Despite the area is scarce in papers and researches, we noticed a growing interest in understanding the strategies used by gamers. Actually, our research contributes in this very matter, for we observed that gamers frequently use some feature or strategy to learn a game and the best way to do so is through graphical tips. As contribution, this work begins to point the types of challenge the designers have in terms of offering help in games. By analyzing gamers' preferences, we can move towards supporting game designers on the task of designing a better help and improve the learning in games.

Our future work will investigate in depth the answers to the survey open-ended questions (the analysis presented here did not explore the full content of those answers), making a qualitative analysis of it. All these data will be triangulated with the result of an observation we made of gamers playing a puzzle game. Since this work is focused on savvy gamers, we wonder about the novice gamers' preferences for learning a game, being this another interesting study to carry out.

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