
Master of the Game: Assessing Approachability in Future Game Design

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Abstract

Game Approachability Principles (GAP) is proposed as a set of useful guidelines for game designers to create better tutorials, or first learning levels—especially for the casual gamer. Developing better first learning levels can be a key step to ease the casual gamer into play and to do so proactively—before it is too costly or cumbersome to restructure the tutorials to be more effective. Thus, Game Approachability in the context of game development is defined as making games initially more friendly and accessible for players who have the desire to play, yet do not always follow-through to actually play. GAP has evolved through a series of stages assessing applicability as a stand alone, heuristic based approach versus one-on-one usability testing. Outcomes suggest potential for GAP as (1) effective Heuristic Evaluation, (2) adjunct to Usability Testing, and (3) as proactive filters in beginning conceptual and first learning level tutorial design to increase Game Approachability—for all levels of gamers.

Keywords

Game Approachability, game design, method development, usability for video games

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

Recently, video game developers and publishers have been modifying their focus from meeting the desires of hardcore gamers to serve the less savvy and less frequent player—the casual gamer. Signaling an important shift in the game industry, this new emphasis on casual gaming indicates that the concept of “Game Approachability” may be as crucial an aspect of gaming fun and entertainment as “engagement” has been historically. Casual gamers, as their name implies, often lack extensive prior game play experience. The casual game player’s more periodic exposure to games in contrast to their hardcore counterpart suggests that casual gamers require more guidance playing video games. This in turn indicates a challenge to support the casual gamer in getting started with game play without divulging the secrets of the game itself—that is, to provide the tools to play games so casual game players have the potential to be confident in mastering the game. Therefore, inclusion of casual gamers into the mix of targeted people for whom games are designed may require specific methods and approaches in game design to better meet these needs.

Today, game design also involves a focus on traditional usability such as creating clear terminology as well as non-intrusive, easy-to-use user interfaces. Hardcore gamers, however, are usually more willing to seek assistance and support in order to play games and have traditionally relied on strategy guides, past expertise, cheat codes, online bulletin boards, and other players to learn to master a game. In direct contrast, casual

gamers are more likely to quit playing than seek out and use any of these resources. Thus, with the growing number of casual gamers, and game developer focus on casual games, the approachability aspect of game playability is more critical today.

Game Approachability

Game Approachability refers to the ease in which gamers are able to approach and avail themselves of games—for all who desire to play. In considering Game Approachability, three questions arise for Game Approachability: (1) how can it be best assessed and applied? (2) What may need to be revised and redesigned in methods used to assess it? And, (3) how will these methods assist designers include better Game Approachability into games [c.f. 5,6]?

GAP – Game Approachability Principles

While more than ten principles are under consideration, a preliminary subset of the GAP aimed at better engaging casual gamers is shown below. This specific “shortlist of six” GAP, was formulated in keeping with leading learning theories such as (1) Social Learning Theory [c.f. 2] (2) Self-efficacy, another key concept and term used in education and learning [1,10]. Further, research about games in education have proved that aspects as “Identity,” “Customization,” “Manipulation and Perception,” and “Information On Demand And In Time” important [9]. Finally, GAP considers other sources already proved important when it comes to games and game design in more CHI/HCI related research [c.f 3,4,7,8,11]. These developing principles were then used in a series of GAP assessment and development work, and are recommended for further research, investigation and validation

Initial Checklist: Game Approachability Principles (GAP) for Improving Game Approachability:

- 1) Observation and Modeling;
- 2) Self Efficacy;
- 3) Gee Game Based Principles (Identity, Manipulation and Perception);
- 4) HEP and PLAY Based Guidelines (such as players not being penalized repetitively for the same failure; varying activities and pacing during the game to minimize fatigue or boredom; etc.);
- 5) Demonstrate Actions and Reinforcement;
- 6) Likeability of the Tutorial

Validation of heuristics

The development of GAP was next subject to a series of assessment and research study toward validating their use. The initial checklist of GAP (shown above) was first derived qualitatively from the aforementioned learning theories. In addition, a series of research activity in two stages involving two usability/playability experts, an educational learning expert, and several game designers was undertaken.

Stage 1

The first stage of GAP development included conducting both Heuristic Evaluation and a Usability Test. Each method involved two video games—a Real Time Strategy game and a Shooter game for a console, each a sample of 28 players. Both with focus on assessing what issues were similar for each method, and what new or different issues resulted from each method. Based on these outcomes, principles which did not promote or enhance Game Approachability were

dropped from the GAP list and led to the creation of a new, revised list for the next stage.

Stage 2

The second initiative undertaken used a new, modified list of approachability principles resulting from Stage 1. The same two-method procedure used in Stage 1 was performed but this time on a Sports and Shooter game, this time a sample of 26 respectively. This stage was conducted to provide additional assessment toward validating the usefulness of GAP with a new set of games.

Stage 3

The third initiative included data from four games (Action Adventure, Shooter, Online Poker, and Real Time Strategy) to again identify differences and similarities in outcomes to Heuristic Evaluation and User Testing regarding GAP. In this third stage of study, one playability evaluator performed GAP Heuristic Evaluation, focusing on how each approachability principle was supported or violated, while doing a walkthrough of the game. The evaluator also assessed and defined playability issues. After Heuristic Evaluation was performed, Usability Testing was also conducted, whereby 32 players engaged in playability sessions. The majority of the players were male and all were between the ages of 8 and 35.

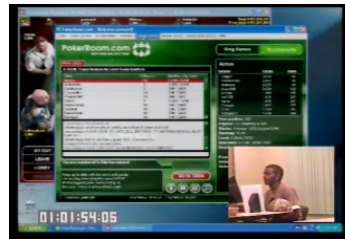
Examples of GAP

The following verbatim comments from players (some with selected accompanying screens; due to space limitations not all can be shown) provide examples of the types of GAP issues identified in both Usability Testing and Heuristic Evaluation:

GAP: Self-Efficacy

Game Genre: Online Poker

"I don't feel comfortable playing this with real money. Maybe if I practiced more I would be, but right now I feel like I would just lose all my money and it wouldn't be very fun."



GAP: Demonstrate Actions and Reinforcement

Game Genre: Sports Racing on the Wii

"I am not sure which way to hold the controller. This is really confusing, I wish that there was an animation that demonstrated to me which way to hold it."



GAP: Gee Game Based Principles /Identity (Positive)

Game Genre: Online Poker

"I really like the avatars and that I can choose which one I want to play with. This makes it more interesting because I feel like I really am the person playing."



Results

Following completion of Heuristic Evaluation and Usability Testing in Stage 3, the results were compared to identify what types of issues were evident in the games. Issues identified were categorized as either a Game Approachability issue or as a playability/usability issue. Game Approachability issues were then categorized as relating to one or more of the Game Approachability heuristics in GAP. Additionally, Game Approachability issues in the games were compared to determine (1) what issues Heuristic Evaluation identified that Usability Testing did not, (2) what issues Usability Testing found that Heuristic Evaluation did not, and (3) what issues were similarly uncovered by both methods. Also, Heuristic Evaluation and Usability Testing results were compared to determine the number of Game Approachability issues identified within each method and by both methods combined. Finally, descriptions of the issues identified were compared to assess any similarities or differences in specificity resulting from each method. We found some issues solely using each particular method: 1) Only using GAP in Heuristic Evaluation; 2) Only found using User Testing; 3) Issues found using both GAP and User Testing.

GAP Heuristic Evaluation Counts

In comparing the two approaches in Stage 3, GAP Heuristic Evaluation identified a higher percentage of Game Approachability issues than did Usability Testing—a total of 90 issues of which 43, or 47%, related to Game Approachability. In contrast, Usability Testing identified 207 issues in total with 22 issues, or 11%, relating to Game Approachability. Also, GAP Heuristic Evaluation found more types of Game Approachability issues than were evident in Usability Testing—six categories of Game Approachability compared to three in Usability Testing. While understandably, Usability Testing uncovered more issues relating to playability and usability (185, or 89%); GAP Heuristic Evaluation identified 27, or 52% of issues involving playability or usability.

Level of Detail

In addition to differences in the number of approachability and playability issues identified by each method, there was also variance in the level of detail that each provided. Usability Testing referred more to (1) specific problematic areas of the games, (2) the number of players having difficulty with certain areas of the game, and (3) verbatim comments from players expressing frustration. Conversely, Heuristic Evaluation would more often (1) identify areas where a player was not given the means to master a skill and (2) indicate other areas in the game that may give players trouble since they did not learn the needed skill. These outcomes are most likely a result of Usability Testing describing problems *as they occur* whereas Heuristic Evaluation more often predicting problems players *will likely encounter*.

The results of each stage under study, and particularly Stage 3, show that GAP Heuristic Evaluation pinpointed a different set of issues overall that were more conceptual—and gave more design clues for organizing the beginning levels for Game Approachability. In contrast, Usability Testing assessed design issues and suggestions that can be considered more granular and directly applicable to the specific game during play. In summary, while Usability Testing is more reactive in approach and can pinpoint problems in existing game design, a key differential and advantage of GAP Heuristic Evaluation is its proactive nature enabling first learning levels design to be conceptualized and planned with approachability in mind.

Conclusions

These results suggest that GAP appear useful in evaluating beginning and tutorial levels of game design and offering suggestions to game designers to improve Game Approachability. Additionally, Heuristic Evaluation with GAP provides information that supplements and complements Usability Testing. GAP Heuristic Evaluation alone provided more applicable and useful information about game approachability while Usability Testing provided more information regarding game playability and usability. Thus, while Usability Testing is able to provide a level of detail not possible in Heuristic Evaluation—including specific commentary from players and the identification of areas to be improved to increase player enjoyment and learning—it does so through an iteration improvement process during game design. Therefore, while Usability Testing may identify problematic areas for players and pinpoint ways to make the goals and game design more clear, Heuristic Evaluation using GAP offers a tool that would help identify necessary skill(s) not learned by the

player which will likely cause problems later in the game for a player when this skill is needed—an important and useful addendum.

In summary, having game designers employ GAP proactively as guidelines and filters in developing the beginning levels of games and tutorials may prove useful in enhancing Game Approachability in games. GAP also offers potential advantages through combining evaluation of the user game experience during game development with Usability Testing to promote higher levels of Game Approachability. Heuristic Evaluation

with GAP provides a more conceptual, proactive design plan for Game Approachability while Usability Testing provides opportunity for retroactive game design correction to improve Game Approachability. Thus, taken together, applications of GAP Heuristic Evaluation and one-on-one Usability Testing offer game designers additional and stronger pathways toward making games more approachable and accessible to the casual player—and ultimately to all players of games.

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