

Barriers to Entry: Designing Player Access in Video Games

William Ryan

Indiana University

1900 E. 10th Street

wnryan@indiana.edu

ABSTRACT

Video games can be sources of pleasure and frustration. For many potential players, frustration is more common than pleasure. These players struggle with the tremendous complexity that exists in modern 3D video games. This paper presents the concept of breakdown [8] as a technique for analyzing this problem that many people have with accessing video games. Breakdown is the moment of failure that a player experiences when struggling with a game. When this happens, players can reflect on this failure to learn how they can get beyond it. This paper, which is based on a study that focused on this problem, shows how designers can use breakdown to empathize with these players and to improve the designs of games for them.

Author Keywords

Video games, breakdown, observation, learning, design.

ACM Classification Keywords

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

INTRODUCTION

Video game culture has been dominated from the top down by young male developers. This problem can hardly be placed entirely on the industry itself as it derives from similar issues in most technology fields. This results in games that are designed for audiences similar to those of the developers. In addition to the creation of games that often provide content that does not appeal and even offends other potential players, it also leads to designs that make many assumptions about what the player may be capable of doing. These assumptions raise barriers that all players must deal with to achieve the in-game objectives. A correlation then develops between the experience a player has with a genre of games, or even

games in general, and the difficulty experienced by a player of a game. Barriers that are just another challenge for some players become impassable for others. However, access to complex 3D video games can be improved for these players.

The most common consequence of this problem is that these “other” players will give up and claim that they just are not any good with video games. Connecting with these potential players, however, is important because they represent huge potential audiences for games and reaching these players is mutually beneficial to both the players and the designers. How can these audiences be reached? To answer this question, game designers need to start understanding what problems these audiences face while playing these games. Designers need to empathize with the players and turn this empathy into design insights.

The Nintendo Wii has already explicitly claimed to adopt this tactic. Designers of this system wanted to design a new type of controller that would be natural and intuitive to encourage non-traditional gamers to play games on the Wii. They leveraged the familiarity most people have with television remote controls to encourage people who may not otherwise play games to try them. Although the system has yet to be released, Nintendo has focused on one of the most frustrating issues that people not used to playing games face: the controller.

One powerful way to understand the problems that players struggle with is using the concept of breakdown [8]. Breakdown is a process that can occur in anything that a human being does. In video games, breakdown happens when players fail to do something that they intended to do. This failure breaks the immersion experienced when they successfully complete their goals. This failure then provides an opportunity for the player to learn what actions the game requires to succeed. It is from this focal point of breakdown that the designer then can gain insight into how games can be designed to provide effective reinforcement, encouragement, and mechanisms by which these players can quickly learn concepts that many of their peers already know.

THE ROLE LEARNING PLAYS IN GAMES

Everything that we interact with requires some amount of knowledge to understand the sense data that we receive from it. When I watch a film, I need both to speak the same language as the actors and understand the significance of cuts and their relationship to space and time to follow it. Video games also require players to learn a specific set of concepts to derive meaning in a game. [7] discussed the play of meaning as the relation between a formal system of signs and the context in which it is enacted, which is play. The relationship of these signs represents what gameplayers need to learn when using video games and play is the way by which they learn about them. [1] developed similar ideas about video games when he referred to such media as ergodic literature. Ergodic literature includes “texts” that require a nontrivial cognitive and physical effort to proceed towards its conclusion. Players need to do some sort of work to make the game operate and experience the pleasure that it can offer. In this sense, video games require an even more specialized knowledge than novels or films to function. Therefore, gaining satisfaction from a game requires learning this knowledge.

Designers of video games must deal with a delicate balance of the experiences that players have in games. [7] called this balance “messy” because designers can only indirectly control the type of experience that a player has through the formal rules of the game (pp. 316). [5] described a similar dilemma by stating that the designer must simultaneously ensure that there is enough challenge to make sure that a game stays interesting to the user without providing too much of a challenge so as to become overwhelming. By providing enough new material with material that the player already is familiar with, the player can shift between periods of immersion in what they are learning and doing and momentary lapses in this immersion as new, unfamiliar challenges arise for the player to learn. If a video game becomes too unbalanced, then a player will soon lose interest in the game and give up. [3] talks about another balance between skills and challenges and a channel called flow that exists between them (p. 74). Flow represents the optimal experience one has when doing an activity. If skills become matched up appropriately with a given challenge, then a person becomes immersed in that activity and experiences flow. When a skilled person takes on a challenge that is too easy or a lesser skilled person takes on a challenge that is too difficult, these persons become bored or overwhelmed respectively and will seek to return to the state of immersion that they once had. Users will eventually stop the activity if they are deprived of this state for too long. Video games follow this same pattern. Too often though with major commercially produced games, challenges are skewed towards those with a high amount of previous knowledge, alienating those that lack this knowledge.

Finally, the act of learning is a liminal activity in video games. As players learn the mechanics of the game and accomplish the goals that are set out by it, they become transformed by the experience. [4] claimed that the learning that occurs in video games is a good example of learning in general because of its connection with identity. Learning correlates with the projective identity in a video game where the real player projects his own values on the virtual avatar. This allows a player to potentially transform the values that he or she invests into the game. [2] characterized the canonical form of learning in video games, the in-game tutorial, as a rite of passage. They described the tutorial as a method to ease this transition of a player throughout various phases of this transformation. When a player experiences a challenge that he or she cannot get beyond, this transition is halted. When the transition is halted, the transformation of values cannot occur, thus depriving the player of the true value of playing games.

LENS OF BREAKDOWN

Breakdown acts in opposition to the experiences that game designers wish to create for their players. It is nonetheless an important aspect of those experiences. As a player, we try to avoid breakdown because it prevents us from succeeding in games. Success in games, however, is not usually itself the pleasure that we experience, but rather it is figuring out the puzzle or challenge that allows us to truly enjoy the game. So even though breakdown itself is not a source of pleasure, it is a necessary step to achieving it. Breakdown was introduced into the field of information technology by [8]. It is a concept that has its roots in the philosophy of Martin Heidegger and phenomenology. Before breakdown happens, users suspend reflection about a tool they want to use and just use it. When users use this tool, the tool is described as “ready-to-hand,” a relationship that could also be understood as immersion. Breakdown occurs when something happens in the relationship between the tool and the user that the user did not intend. The tool becomes “present-to-hand” and the user focuses his or her attention on the tool that is no longer operating as he or she wants it to. [8] gave the example of an email message that is returned with a cryptic response from the computer that the user does not understand. This failure of intention opens up the possibility of learning from the experience (e.g., how to get the email message through) to ensure that it does not happen again.

Designers can observe this process as it happens to learn about the problems players have in video games as well as how players react to these problems. How does one go about observing breakdown? Interested designers must closely watch players from audiences they wish to design for actually play the game and interpret the experience

that the two of them share. Such observations were part of a study that I performed. There were four important issues that emerged from this study that an investigator into breakdown should address. Investigators must:

- Go through the learning process of a game themselves whenever possible
- Be experienced in the game being observed
- Ask naive questions to players
- Contrast the decision that they would make with the decision the player makes when completing a given challenge

This list operates as a guide for gaining insights from observing breakdown. First, a designer should try to be empathetic towards the user that they are trying to design for as mentioned above. If one has gone through many of the frustrations that a user may experience when playing the game, the investigator will already be sensitive to many areas where a user may struggle. This can provide indicators of breakdown in the observation before they occur. Second, an investigator must thoroughly know the video game that they are observing because he or she must understand what the game requires the player to do. This also allows an investigator to see how a player's strategy forms around the resources the computer gives a player for accomplishing an objective. Third, the investigator must ask questions that draw out a player's thoughts and perceptions so as to make as few assumptions as possible about the player's experience. Fourth, being both experienced with a game and witnessing someone who is not as experienced in the game, the investigator can compare different strategies that exist for accomplishing an objective. This can lead to an understanding of certain assumptions that are latent within the design of the game. Finally, one must resist the temptation for giving advice to players for situations in which the player becomes hopelessly stuck. This will provide ample opportunity for players to solve the problems of the game on their own.

This list acts as a set of guides for the observation of breakdown. The only requirements for this process are being attentive and valuing the player and the experience the player has. An investigator must also go through a process called 'epoche.' 'Epoche' means to remove the biases that shape what we see from what actually happens, which is the player's actual gameplay experience. [6] states that even though we can minimize these biases, we can never remove them completely. The best that investigators can hope to accomplish in their observations is to be aware of as many of their biases as possible. However, even one who is deeply involved with the design process of a video game can stand to learn about the experience that a certain type of player has. Someone in this position will have a different

interpretation of the experience than someone who is not involved in the design process of the game. The design insights of each, however, are no less effective and valuable.

APPLICATION TO GAME DESIGN

The observation of breakdown can inform the design of video games in many different ways. First, breakdown can be used to identify and fix areas of the game that are confusing to a user. For instance, if an objective that the user needs to accomplish is not clear, the designer can improve the instructions or provide hints for the user to clarify the objective. Second, observing the sections of a video game where players struggle can inform designers where cues and affordances for interaction can be placed to give players hints about what actions they can perform in the environment. Third, breakdown can help those who design tutorials and just-in-time help to provide the users with information at the right time and about the things that they may struggle with. Finally, observing breakdown can help designers understand what problems users have when trying to resolve the meaning of a game. It can help with general symbolism and representation.

Each of these opportunities for redesign occurred in the study that I organized. First, an example of breakdown due to user confusion occurred in Sly Cooper 2. I refer to the objective for the second task in the game, which was to walk across a rope connecting two buildings. The instruction the computer gave to the player in the study appears in Figure 1. Until this point, no explicit instruction had yet been given about how to perform a jump, even though the player needed to have correctly executed one to get to this point. The assumption made in this instruction is that the player had already associated jump with the X button on the Playstation 2 controller. Nevertheless, I watched as the player struggled for a little over a minute with how to cross the rope. Later in the game, the player displayed knowledge of this concept, which showed that struggling with this problem helped him to learn it. Conditioning and repetition, however, could have been used to get this concept across without the same amount of frustration. In this case, the designer could simply change the instruction to, "If memory serves, you need to hit X (jump) then O (walk on rope) to run along ropes."



Figure 1: Sly Cooper 2 instruction

Second, an example of breakdown identifying areas where affordances could be introduced occurred in the video game *Myst*. Although *Myst* already provides affordances for interaction in the environment when the user hovers the mouse over an object, these affordances do not seem to be enough for most users. Consequently, a peculiar pattern of behavior develops in *Myst* and games like it when players get stuck. The user will click on every inch of the screen to see if anything happens when they click. The problem in *Myst* is that objects in the environment are not apparent enough for users to be aware of their presence. Frustration quickly mounts for users in these situations when these objects hold the key for moving on to the next section. Some games, such as *Morrowind*, actually highlight objects in the environment that can be interacted with to allow users to distinguish between individual objects and the environment itself. While this mechanism may not be favorable to the designer who wants to present this as a puzzle to be solved, sometimes compromises need to be made if it means the designer risks losing a player due to frustration. Therefore, a balance between problems to be solved and making sure the player has opportunities to make progress is crucial and should be verified with user testing.

Third, an example of breakdown aiding the design of tutorials and instructions occurred in the game *Morrowind*. The game actually is not as important to this design issue as the camera movement and navigation of the game that is a mechanism within it. *Morrowind* is a typical first person style video game. The person playing this game in the study, however, had little experience with this type of video game. Thus, her movements occurred much more slowly and consciously than a person with more experience. This led to problems when the player started being attacked and needed to move quickly to face the enemy to fight it. The camera mechanism used involves separate controls for camera movement and character movement using the two analog sticks on the

controller. It originated in the Xbox game *Halo* and with this novel type of interaction came a tutorial explaining in detail what a player needed to do to use this system. By the time games like *Morrowind* were released, the mechanism had become convention, and training for this type of interaction had been dropped. This omission increases the difficulty that a beginner must face to play this game. Designers can make this game more usable for these players simply by providing the opportunity for training in this mechanism.

Fourth, an example where breakdown helps designers understand problems of representation occurred in *Neverwinter Nights*. This dungeons and dragons based role-playing game provides the player with an inventory for items that they are carrying around. One feature of the inventory interface is that it allows the player to carry around items that he or she is not be able to equip, but can sell for extra money. The interface would turn the background of these items red to differentiate between items that you could not equip and those that you could. The player that played this game in the study struggled to make this association, however. The player continually tried to equip a short arrow to fire an arrow at the target to accomplish an objective in the tutorial, but the game would not let him. He was only allowed to equip a smaller slingshot. After a few minutes, I finally just gave him a hint to try all the different ranged weapons and he finally figured it out. It was clear that the red background was not enough to cue this player that this weapon could not be equipped. A simple message explaining that he cannot equip this weapon could perhaps be enough to convey to the player what the problem is.



Figure 2: Short arrow that the player cannot equip in *Neverwinter Nights*

These four ways in which breakdown can inform the design of video games are not an exhaustive list. It merely shows several possible examples from the study that I performed. It should be noted that breakdown does not offer a step-by-step procedure for designers to follow to ensure their games are usable by all. Instead, it is an

interpretive procedure that is highly dependent on the audience and game being played.

So where does the observation of breakdown occur in the design process? It is most effective early in the process, but can provide useful insight throughout. It can be used to see how players experience challenges that are introduced in a game and can be observed in early playable prototypes of a game. It can be performed at similar times as other observations such as usability testing, but must be kept separate as it requires the observer to take on a different mindset from the one used for traditional usability testing.

CONCLUSION

Many improvements yet have to be made on the access that people have to video games. Problems occur for these players because of the complexity in video games that simultaneously acts as a source of pleasure for some and a barrier for others. Challenges become too great for these latter players, and they are unable to achieve immersion by playing the game. Prior experience becomes a prerequisite just for learning how to play the game. The situation however is not hopeless. Designers can observe these players experience breakdown while trying to play the game and accomplish their objectives. Close observation of this phenomenon can reveal patterns that are useful for the redesign of video games that reduce many of the barriers that non-traditional gamers face. These players will be able to become more immersed and have more “fun” in the game, but more importantly the learning process will be brought within their reach. When

this happens, the transformative power of the video game can be released for these players.

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