# GAME DESIGN WORKSHOP

## A Playcentric Approach to Creating Innovative Games

**Second Edition**

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*with Christopher Swain and Steven S. Hoffman*

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Morgan Kaufmann Publishers is an imprint of Elsevier.
30 Corporate Drive, Suite 400, Burlington, MA 01803, USA

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**Library of Congress Cataloging-in-Publication Data**
Fullerton, Tracy.
Game design workshop : a playcentric approach to creating innovative games / Tracy Fullerton, with Christopher Swain, and Steven S. Hoffman. –2nd ed.
p. cm.
Includes bibliographical references and index.
ISBN 978-0-240-80974-8 (pbk. : alk. paper) 1. Computer games—Programming. 2. Computer games—Design. 3. Computer graphics. I. Swain, Christopher, 1966–II. Hoffman, Steven, 1965–III. Title.

QA76.76.C672F84 2008
794.8'1526—dc22 2007040857

ISBN: 978-0-240-80974-8

For information on all Morgan Kaufmann publications,
visit our Web site at *www.mkp.com* or *www.books.elsevier.com*

Printed in the United States.
08 09 10 11 5 4 3 2 1

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# Chapter 9
# Playtesting

Playtesting is the single most important activity a designer engages in, and ironically, it is often the one designers understand the least about. The common misconception is that playtesting is simple—just play the game and gather feedback. In reality, playing the game is only one part of a process that involves selection, recruiting, preparation, controls, and analysis.

Another reason that designers often fail to playtest properly is that there is confusion over its role within the game development process. Playtesting is not when the designer and her team play the game and talk about the features. That is called an internal design review. And playtesting is not having the quality assurance team go through and rigorously test each element of the software for flaws. That is quality assurance testing. And it is not when you have marketing execs sitting behind a two-way mirror watching a representative sample group play and discuss the game while a moderator asks them how much they would pay for this product. That is focus group testing. And it is not when you analyze how users interact with your interface by tracking their mouse movements, eye movements, navigation patterns, etc. That is usability testing.

So what is playtesting? Playtesting is something that the designer performs throughout the entire design process to gain an insight into whether or not the game is achieving your player experience goals. There are numerous ways you can conduct playtesting, some of which are informal and qualitative, and others that tend to be more structured and quantitative. For Halo 3, Microsoft Games User Research conducted over 3000 hours of playtesting with more than 600 players in one of the most sophisticated playtesting facilities in the world.[1] Most professional games go through some level of playtesting, if not this extensive, either at their publisher's facilities or with an outside testing group. Your game might have 10 or 20 playtesters, possibly playing in your garage. All of these are valuable and important tests that are performed at the level of facility available. But the one thing all of these forms of playtesting have in common is the end goal: gaining useful feedback from players to improve the overall experience of the game.

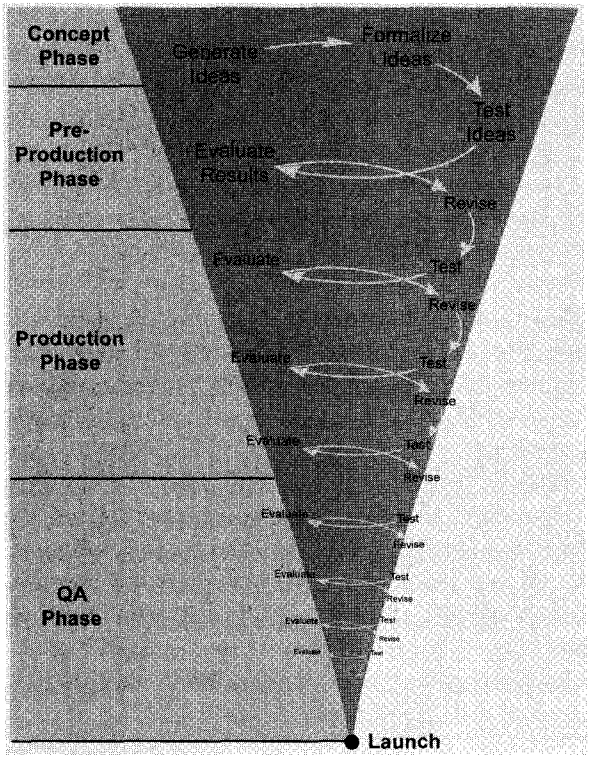
As you develop the game, other groups will perform other types of tests. The marketing people will try to determine who is going to buy the game and how many units can be sold. The engineering team will utilize the QA department to test for bugs and compatibility problems. The interface designers will employ a variety of tests to see if people can operate the game in the most efficient and user friendly way. But as a designer, your foremost goal is to make sure the game is functioning the way you intended, that it is internally complete, balanced, and fun to play. And this is where playtesting comes in.

## Playtesting and Iterative Design

Recall that we said the primary role of the designer is as an advocate for the player. This does not just mean in the early stages of design; the game designer must keep that relationship with the players' needs and perspective throughout the design and production process. Often, as teams work at a project long days and nights for months at a time, they forget the player in their own quest to make the game live up to their vision.

A continual iterative process of playtesting, evaluating, and revising is the way to keep the game from straying during that long arduous process of development. Of course, you cannot keep changing the basic game design—after all, the goal is to release a product eventually. Figure 9.1 shows how the testing cycle gets tighter and tighter as production moves forward, signifying smaller and smaller design issues to solve and changes to make, so that you are not making fundamental or dramatic changes to the game as the process draws to a close. This method of continually testing your assumptions with players will keep your game on track throughout the production.

You might be thinking, But testing is an expensive process, isn't it? Wouldn't it be better to wait until we have a fully working game—say about the time we have a beta product—and test it then? That way, players will get the best experience. We cannot argue against this way of thinking strongly enough. By that time in the process, it is really too late to make any fundamental changes to your game. If the core gameplay is not fun or interesting at this point, you are stuck with it. You might be able to change some top-level features, but that is it.




**9.1 Model for iterative game design: playtest, evaluate, and revise**

We advise playtesting and iterating your design from the very moment you begin. And we can show you how to do it without much expense—just your own time and some volunteers. The expense you will save is the cost of changing your game at the very end of production or releasing a game that does not live up to its full potential.

## Recruiting Playtesters

Before you can playtest, you must have playtesters. But how do you begin and who should you trust? In the earliest stage, when you are creating your first prototype, the single best tester you have is yourself.

### Self-Testing

As you build a working version of your game, you will naturally try it out repeatedly to understand how it functions. If you are collaborating with other designers on the prototype, you will self-test both

as a group and as individuals. Self-testing is most valuable in the foundation stage of a prototype when you are experimenting with fundamental concepts. It is a large part of the process that enables you to come up with the core mechanics for the system. It is also where you create solutions to glaring problems with the play experience. Your goal at this stage is to make the game work, even if it is only a rough approximation of the final product. You will continue to self-test throughout the life of the project; however, as you progress and your game evolves, you will have to rely more and more on outside testers to gain an accurate understanding of what it is you have created.

### Exercise 9.1: Test It Yourself

Take either the digital game prototype that you developed in Exercise 8.8 or the physical prototype you created in Exercise 7.9 and playtest it yourself. Describe in detail what goes through your head as you play the game. Start a playtesting notebook in which you record all of the feedback you get from yourself and other testers.

## Playtesting with Confidants

When you move past the foundation stage and the prototype is playable, test it with people you know well, such as friends and colleagues outside the design team. These people will bring fresh eyes to the project and will uncover things you have not considered. You might need to be present to explain the game to them when you begin. This is because the prototype will likely be incomplete in the structure stage. The goal is to get to a version that people can play without much intervention from you. You should be able to give playtesters the prototype, and they should have enough information to begin playing. With a physical prototype, this will require that you write a full set of rules. With a software prototype, the user interface will need to be in place, or you might need to provide some written rules.

**9.2 Friends and family playtest for a new game prototype at thatgamecompany. Game designer Jenova Chen explains minimal information to get the game started.**

When your game is playable and you have a clearly defined set of rules, you must wean yourself from your confidants. Testing with friends and family might feel like it works, and it does in the early stages, but it won't suffice when the game matures. The reason is that your friends and family have a personal relationship with you, and this obscures their objectivity. You will find that most of them are either too harsh or too forgiving. It all depends on how they are used to interacting with you. Even if you believe that your confidants are providing balanced feedback, it is best not to rely too heavily on a small group of individuals. They will never give you the objective, broad criticism that you require to take your design to the next level.

### Exercise 9.2: Test with Confidants

Now take your original prototype and give it to some confidants. Have them test it. Write down your observations as they play. Do your best to determine what they think of the game without asking them any leading questions.

## Playtesting with People You Do Not Know

It is often hard to show your incomplete game to strangers. It means taking criticism from people you have just met. But it is only through the process of inviting total strangers into your office or home and allowing them to play your game and criticize it that you will gain the fresh perspective and insight you require to improve your design. This is because outsiders have nothing to lose or gain by telling you honestly how they feel. They are also untainted by any knowledge of the game or personal ties. If you choose them carefully and provide the right environment, you will see that they can be as articulate and dedicated as your coworkers and confidants. There is no substitute for finding good playtesters. Make them an extension of your design process, and the results will become apparent immediately.

## Finding the Ideal Playtesters

So how do you find these perfect playtesters who have never heard of you or your game? The solution is to tap into your community. You can recruit playtesters from your local high school, college, sports clubs, social organizations, churches, and computer users groups. The possibilities are endless. You can also find a broad demographic of recruits by posting online or putting an ad in a local paper. The more sources you try, the better your candidate pool will become. It is as simple as putting up a notice in a local game store, college dorm, library, or recreation center. You will find that people want to be part of the process of creating a game, and if your invitation sounds attractive, you should not have trouble lining up testers.

The next step in recruiting is actually screening out and turning down applicants. You can only do this after you get enough applicants. What you should be looking for is a group of testers who are articulate enough to convey their opinions to you. If they cannot hold a decent conversation on the phone, they probably won't be of much use. We do not expect you to be an expert in demographics or sampling, but it does not hurt to ask a few questions to help sort out which applicants are going to be useful and which are a waste of time. Questions can include: What are your hobbies? Why did you respond to my bulletin? How often do you buy this type of game? If the tester is not a consumer of the type of game you are making, his feedback will be less useful.

## Playtesting with Your Target Audience

The ideal playtester is someone who represents your target audience. You want testers who actually go out and spend their hard-earned money to buy games like yours. These people will give you far more relevant feedback than someone who would not be attracted to your game in the first place. They will also be able to compare your game to others they have played and provide you with additional market research. And most importantly, they know what they like and what they dislike, and they will be able to tell you this in excessive detail. When you tap into your audience, you will uncover a wealth of information and gain an insight into your game that no one else can provide.

### Exercise 9.3: Recruiting Playtesters

Now it is time for you to recruit several total strangers to playtest your game prototype. Make sure that they are in your target audience. Set up a time with these playtesters to conduct the test. Exercise 9.4 will help you prepare to get the most from the session.

The more diverse a group you can recruit, the better. By diverse, we mean a broad range of people within your target audience. You want to tap people who play your games, but you do not want to focus on too narrow a section of your total audience. Your pool of testers should represent the entire spectrum of consumers of your product. Posting notices on gaming Web sites is a great way to recruit testers in your area.

If you are worried about people stealing your ideas, have them sign a nondisclosure agreement (NDA).

This is a simple agreement where a person promises not to tell anyone about your product until it is released. In game companies, playtesters are typically paid in cash or free games. With independent games and personal projects, the testers are typically not paid, but they gain the satisfaction of contributing their thoughts.

The level of caution you take is up to you, but remember this: Do not be paranoid. The fact is that 99.99% of the people out there have no intention of stealing your ideas, and even if they did, the vast majority would not know what to do with your game after they stole it. The benefits of using playtesters far outweigh the perils. In fact, the risk of using testers is negligible when compared to what else can go wrong during a production.

For most tests, you will need to recruit new playtesters so that you get fresh input, but later in the design process, you might want to bring some of your most articulate testers back in to gauge how they feel the game has progressed. You might even find that features that you removed or changed do not work as well, and these testers will be able to point that out. Figure 9.3 shows the various stages of prototyping and the types of playtesters you should involve at each stage.

| Prototyping Stage | Playtest on Your Own | Playtest with Confidants | Playtest with Target Audience |
|---|---|---|---|
| 1) Foundations | ● | | |
| 2) Structure | ● | ● | |
| 3) Formal Details | | | ● |
| 4) Refinement | | | ● |

**9.3 Types of playtesters appropriate for each stage of prototyping**

## Conducting a Playtesting Session

So now that you have all these strangers in your office or living room, what do you do with them? At this point, many game designers make a common mistake—they begin to tell players about their game, how it works, their plans for future developments, their hopes and dreams for the game. But this defeats much of the purpose of getting a fresh perspective on the game. Once you have told a playtester how the game is supposed to work, you can never go back and see their natural first impression. We tell our game design students to always keep in mind that "you don't come in the box," meaning that when the game goes out to the public, you won't be there to explain it to each and every player.

Your role at this point is not that of the game designer but that of an investigator and observer who must give these playtesters access to the game, lead them through a useful playtest, record what they say and do and, later, analyze their responses. Rather than telling players what to think about your game, or explaining how it works, let them play it with no or minimal explanation. Allow them to make mistakes. See how each person approaches the game. Maybe your rules are confusing. Provide answers if they get really stuck, but for the most part, let your testers figure it out. You will learn much more from the mistakes players make than you will if they play the game flawlessly based on your explanations.

The best way to run a playtest is to have an objective person run the test while you watch from behind a one-way glass or on a video feed. If you are doing this at home by yourself, you might not have that option. The next best solution to help control your impulse to talk too much is to create a test script. This script will keep you on track and remind you of your role as an observer. Your script should include at least the following sections and perhaps several others depending on the type of test you are doing.

## Introduction (2-3 Minutes)

First, welcome the playtesters and thank them for participating. Introduce yourself—your name, occupation, a bit about what you are doing. Then give a brief explanation of the playtesting process and explain how this will help you improve your game. If you are audio- or videotaping the session, let the players know and ask if they have any problems with this. Assure them that this is for your reference only and won't be shown outside the design team. Also, if you are using a special usability room (i.e., with one-way glass, let them know if there are other people watching the test from behind the glass).

## Warm-up Discussion (5 Minutes)

Develop several questions to find out about the games they play that are similar to your game, what they like about them, what are their favorites, etc. Some suggested questions are as follows:

- Tell me about some of the games you play.
- What do you like most about these games?
- Where do you go to play/find out about new games? Why there?
- What was the last game you purchased?

## Play Session (15-20 Minutes)

Explain to the playtesters that they will be trying out a game that is still in development. The purpose of the session is to get their feedback on the experience. Make sure they understand that you are testing the game, not their skill. There are no wrong answers, and any difficulties they have in playing the game will help you improve your design.

There are two ways to proceed at this point. One is to leave the playtesters alone in the room and watch them play from behind one-way glass or on a video feed if you have set up a camera. The other is to stay in the room and watch quietly from behind the playtesters. In either case, it is important to ask the playtesters to "think out loud" when they are playing. By this, we mean that you want to hear what choices they are making and what uncertainties they have when playing. For example, "I think this is the inventory button, so I'll click it. Oh, I guess it's not. Well then this one must be . . . hmmmm. Where is it?" You can see that by having a running monologue of what is going on in the players' minds, you will learn a lot more about their expectations than if they were simply sitting quietly and clicking on buttons. If playtesters forget to think out loud—and they often do—you can gently remind them by asking them a question about what they are thinking.

You should let your playtesters play for at least 15-20 minutes while you observe them. If they play longer than this, they tend to get tired. If the testers have a tremendous amount of difficulty, you can give them help to move the session forward, but be sure to put in your notes where and why the problem occurred.

## Discussion of Game Experience (15-20 Minutes)

After about 20 minutes, hopefully at the end of one or more levels, you will want to wrap up the play session and have a one-on-one discussion with the testers. You will want to develop a set of questions for this discussion that probe for overall appeal, interest level, challenge level, and that check for understanding of game features. Some example questions are as follows:

- Overall, what were your thoughts about the game?
- What were your thoughts about the game play?
- Were you able to learn how to play quickly?
- What is the objective of the game?
- How would you describe this game to someone who has never played it before? What would you tell them?
- Now that you have had a chance to play the game, is there any information that would have been useful to you before starting?
- Is there anything that you did not like about the game? If so, what?
- Was anything confusing? Please take me through what you found to be confusing.

As your design process goes on, you will have more specific questions in this section regarding difficulty, progression of levels, look and feel, sound effects, music, tone, characters, etc. This discussion should focus on the most important design questions you have at this point in the process.

## Wrap-up

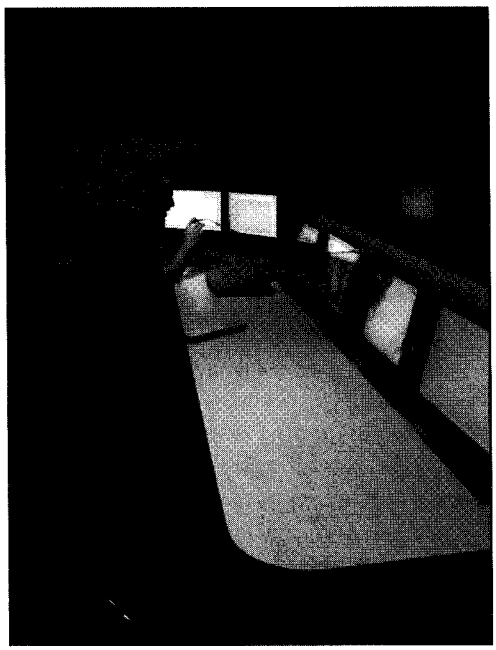
Thank the playtesters for coming in. Make sure you keep their contact information so you can let them know when the game is finished. If you have a token gift, like a T-shirt for your game, you can give it to them now.

### Exercise 9.4: Writing a Playtest Script

Write a script for the playtest session you set up in Exercise 9.3. Be sure to address areas of your game design that you have questions about. Do not lead or suggest ideas to the playtesters.

The most difficult part about this process will be learning to listen to the playtesters' feedback without responding to every point. You, as the designer, invariably feel a strong attachment to whatever it is you have created. You have spent a lot of time and effort on your game and it is only natural to become defensive. We advise you to try and ignore your ego. If you are going to gain anything from a playtesting session, you have to learn to take feedback without emotional response. Do not answer criticisms, just write them down. Learn to listen carefully to what players are saying. Keep in mind that your goal is not to have these people tell you that they love the game but to discover what they do not like about it or do not understand. Far too many designers fail to learn to listen to criticism. Either they try to answer any negative comments or make excuses for their game because taking the criticism is too painful.

If you refuse to take feedback, or if you lead your testers into saying what you want to hear, you will find that they will gladly fall in line. You invited them to your office or home, and they do not want to upset you. They want to please you. And if you let them, they will tell you whatever it is that you want to hear. If you are determined to hear only good news,



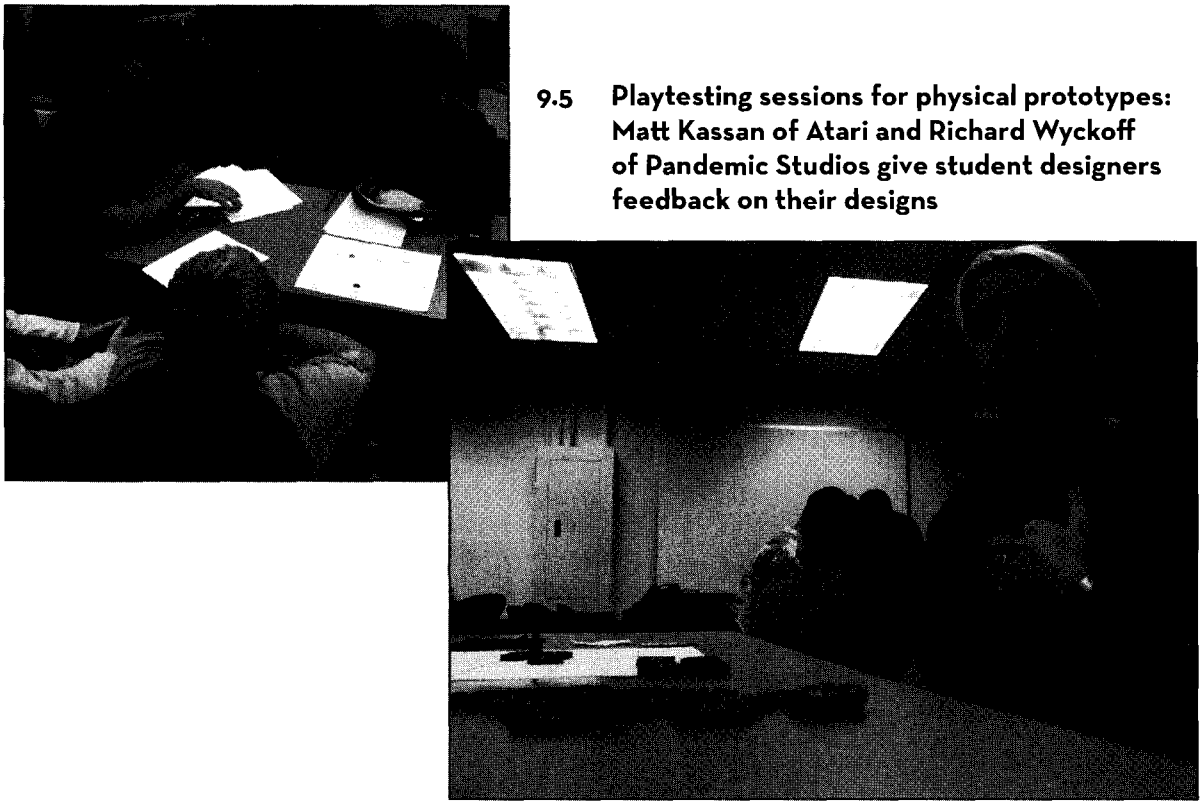
**9.4 Leading a playtest session; view from behind one-way glass**

then that is what you will get. It might make you feel like a genius, but it won't make your game any better. Instead try to embrace the criticism you receive from your playtesters. Even if you feel awful inside, remind yourself that you need to hear the problems because you cannot fix the problems if you do not know what they are. And it is better to hear the bad news now than later from a game critic. Do not let this chance slip past.

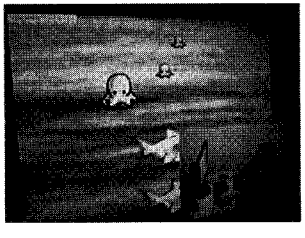
There are times when the criticism can get a bit heavy. If you are testing in a group, one tester might be particularly vocal and begin to sway the others. Many professional usability facilities isolate playtesters for this very reason. However, you might not have that luxury. It helps to make it clear at the beginning of the session that you are open to feedback and want everyone to be honest, but at the same time there is a certain etiquette you would like the testers to follow. Everyone should respect each other's opinions and allow each other a chance to speak. There is no right or wrong answer, and no tester should ever criticize another tester's ideas. If you lay down some good rules for the discussion at the outset, you should avoid most problems.

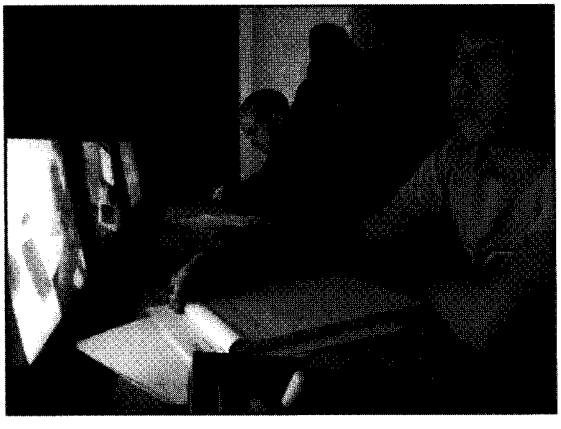
Most people want to be helpful; after all, that's why they volunteered. Before you take offense at the comments of a playtester, be sure to look inside yourself for the answer. Are you being too sensitive? Is the criticism truly harmful or is this person unaccustomed to giving feedback? How are the other testers reacting to this person? It's true that one bad seed can skew results, casting a negative spin on everything, but do not jump to conclusions. Your ultimate goal is to take what you are given and learn from it, not silence anyone who says something that you do not like.

You will make mistakes at first, but leading an effective playtest is a skill you should practice over



**9.5 Playtesting sessions for physical prototypes: Matt Kassan of Atari and Richard Wyckoff of Pandemic Studios give student designers feedback on their designs**





**9.6 Playtesting sessions for digital prototypes**

and over. Becoming a good listener and maintaining objectivity when taking criticism is something that will help you throughout your career. The same skills can be applied to your production environment. In addition to playtesters, you need your team's input and constructive criticism, and the best way to elicit this is to make your entire production a safe environment where everyone is encouraged to speak their mind while being careful not to personally criticize each other. If you apply the same rules described earlier to all of your group meetings, you will wind up with a far more productive and motivated team that feels invested in the product you are creating together.

### Exercise 9.5: Playtesting Your Game

Conduct the playtesting you set up in Exercise 9.3. Use the playtesting script you wrote in Exercise 9.4 to keep the session on track. Take notes in your playtesting notebook from Exercise 9.1 recording feedback and problems.

## Methods of Playtesting

Most professional usability testing takes place individually. It is a generally accepted rule that group dynamics are good for generating ideas but very bad for evaluating ideas. On the other hand, you might have no choice, depending on the nature of your prototype and environment, so do not feel like you cannot playtest just because you do not have the perfect setup.

Here are a number of different ways you can structure your tests, each with their own positives and negatives, but one or more should work for the environment you have available.

- *One-on-one testing:* As described in the previous test script, you sit down with individuals and watch over their shoulders or from behind

**9.7 More playtesting sessions for physical prototypes: Steve Ackrich of Activision and Neal Robison of Vivendi-Universal give student designers feedback on their designs**

one-way glass as they play the game. You take notes and ask them questions both before and after the session.

- *Group testing:* You get a group of people and allow them to play your game together. This works best for physical prototypes, but it is also useful for digital prototypes if you have access to a lab with several computers. You observe the group and ask questions as they play.
- *Feedback forms:* You give each person who tests your game a standard list of questions to answer after playing and then compare the results. This is a very good method for getting quantitative feedback. Professional testing facilities, like Microsoft Games User Research, use digital forms that feed into a database of user responses and allow them to generate reports for analyzing the data. You can do this too, if you like, using online tools such as SurveyMonkey.com or even an Excel spreadsheet.
- *Interview:* You sit down face-to-face with the playtesters and give them an in-depth oral interview after the playtesting session. This is not a discussion; it is more of a verbal quiz.
- *Open discussion:* You conduct either a one-on-one discussion or a group discussion after a round of playtesting and take notes. You can either promote a free-form discussion or have a more structured approach where you guide the conversation and introduce specific questions.
- *Data hooks:* As playtesting becomes a more accepted process in the game industry, new tools and techniques are being developed for gathering data. At Microsoft Games User Research, for example, they integrate data hooks into the game engine that collect data on player movement and actions in the game. This data is then analyzed to show where players are progressing as expected and where they are taking too much time or getting stuck. Dealing with data hooks might be beyond your level of expertise, but it is good to know about such techniques because they will undoubtedly be an important part of the next generation of testing methods for games.

You can combine the previous approaches to fit your game and your space. For example, you can have players play a game together and have a group discussion afterward, but then ask each person to fill out a feedback form individually. You will be surprised how differently people respond when there is no group dynamic.

Over time, you will find out which methods work best for you at each stage of testing. Our goal is to encourage you to test no matter what your limitations are. If none of the structures on our list works for you, then think creatively and come up with your own methods. Try some of these different processes if you can. You will see how each method produces different results, and you will broaden your testing techniques and experience.

# Why We Play Games

by Nicole Lazzaro, President, XEODesign,® Inc.

To take games to the next level of emotional engagement, we at XEODesign wanted to know more about the role that emotions play in games. Since opening our labs in 1992, we have seen gamers get excited, angry, amazed, and even cry. We were curious as to what could be said of all computer games. How many emotions come from gameplay? Are emotions what makes games fun? To find out we conducted research by watching people's faces as they play.

People play games in four ways. They enjoy the opportunity to master a challenge and to fire their imaginations. Games also offer a ticket to relaxation and an excuse to hang out with friends. Based on our research, each of these playstyles offers the player a distinct set of emotions that come from different ways of interacting with a game. Best-selling games such as Bejeweled, World of Warcraft (WOW), Halo, and Diner Dash tend to offer three out of the four types of fun, and players tend to rotate between these playstyles during a single play session.

We call these playstyles the "4 Fun Keys" (Hard Fun, Easy Fun, Serious Fun, and People Fun) because each is a collection of game mechanics that unlocks a different set of player emotions. Game designers cannot create the experience of play directly; instead they design rules that create the emotional response in the player. Like tasting chocolate or wine, each game has a unique emotion profile. The character of a fine wine comes from the way its flavor profile creates a variety of sensations over time, such as a nose, a head, and a nice long finish. Games are similar, only the emotion profile of games has more dimensions than beverages because the game offers opportunities for a distinct array of emotions based on player choice. In XEODesign's research, players do not want next generation graphics. What creates next generation player experiences (PX) is a range of emotions coming from four types of play.

*"Games are a series of interesting choices." —Sid Meier*

Game designers forget that emotions are more than the prize at the end of a stimulus-response-reward loop. Emotions involve goals and things that people care about and that happen before, during, and after choices. Emotions are not just for entertainment. Emotions around decisions shape the player experience before, during, and after a move in a game.

Emotions play five roles in games. Players **enjoy the sensations** that emotions create. Emotions **focus attention**; a boiling lava pit gets players' attention more than a city sidewalk. They **aid in decision making**; without the aid of emotional systems, people can logically compare the consequences of two options but cannot make the choice itself. For example, in Splinter Cell the choice between certain death and escape via a narrow window ledge is easier to make than selecting a door in an empty office corridor. Emotions **affect performance**. The negative emotions in Battlefield 2 facilitate the type of repetitive behavior the game rewards: shoot the sniper and move on. The positive emotions from Katamari Damacy inspire creativity and problem solving, helping the player figure out how to roll their little sticky ball from the floor to up on a table. Finally, emotions **reward and motivate learning** because all games teach.

To learn about the most important emotions from play experiences, we observed the emotions that appeared on players' faces as they played their favorite games. Based on the work of psychologist Paul Ekman and others, there are seven emotions you can measure in the face: anger, fear, disgust, happiness,

sadness, surprise, and curiosity. There is a reason why games feature boiling lava monsters, dark hallways, spewing blood, and narrow paths along cliffs. Fighting and survival horror games use these techniques to create the first three emotions. The other three facial emotions, including those we have identified that come from gameplay, involve player decisions from other aspects of gameplay.

*"I always know how my husband feels about a game. If he screams, 'I hate it! I hate it! I hate it!' then I know two things. A) He's going to finish it. B) He's going to buy version two. If he doesn't say these things, he will put it down after a couple of hours."*

Games provide players with the opportunity for challenge and mastery. One of the most important emotions from games is fiero, an Italian word for the feeling of personal triumph over adversity. Overcoming obstacles, puzzles, levels, and boss monsters helps players feel like they won the Grand Prix. It is a big emotion and ironically requires the player to feel frustrated first. To feel fiero, games get the player so frustrated that they are almost ready to quit and then they succeed. Then there is a huge phase shift in the body. The players go from feeling very frustrated to feeling very good. Unlike films, games provide fiero directly from choices that players make themselves. A film will never hand the audience a Jet Ski to save the world from nuclear doom, but a game has to because in games, player choice matters. For a game to continue to offer fiero from Hard Fun, the difficulty must increase to match player skill. The best games offer options for new strategies rather than simply adding more obstacles in less time. For example, in Diner Dash the trophy from winning level 4, such as a coffeemaker, changes the strategy for level 5.

*"In real life if a cop pulled me over I'd stop and hand over my driver's license. Here I can run away and see what happens."*

Beyond challenge, players also enjoy games for exploration, fooling around, and the sheer joy of interaction. Great games engage the imagination as well as the desire to achieve a goal from Hard Fun. Easy Fun is the bubble wrap of game design. Curiosity drives players to drive the track backward in Gotham Racing, put their Sims in the pool and pull out the ladders, and role play. Like improv theater, games offer players opportunities for emotions. In basketball, in addition to the score and making baskets, players enjoy dribbling or doing tricks like a Harlem Globetrotter. In Grand Theft Auto 3 players can drive any car they want, and the game offers other things such as plate glass store windows. The game leaves it to the player to see how the two interact. Games that respond to player choices off the path to a high score offer Easy Fun. For example, in Halo, when the Hard Fun is finished and all the aliens are gone, players enjoy the novelty of running around blowing things up or exploring a surrealistic ring world where the horizon curves up overhead. Players move between the Hard Fun and the Easy Fun of the game to prevent themselves from becoming too frustrated. The designers of Myst believe that the journey is the reward.

*"I play after work to blow off frustration at my boss."*

In Serious Fun, players play with a purpose. They use the fun of games to change how they think, feel, and behave or to accomplish real work. Through gameplay players express or create value. People play Dance Dance Revolution to lose weight and Brain Age to make themselves smarter or ward off Alzheimer's. Players blow off workplace frustration, relieve boredom standing in line, and laugh themselves silly. Some choose to play games such as Wii Sports over violent games because it reflects their values. The repetition and collection mechanics in games like Bejeweled create emotions and increase engagement in a visceral

way. If, instead of rubies and diamonds, the player matched dirty broken glass and animal droppings, the game would feel very different to play. With Serious Fun players feel good about the value that the game creates before, during, and after play.

*"People are addictive, not the game."*

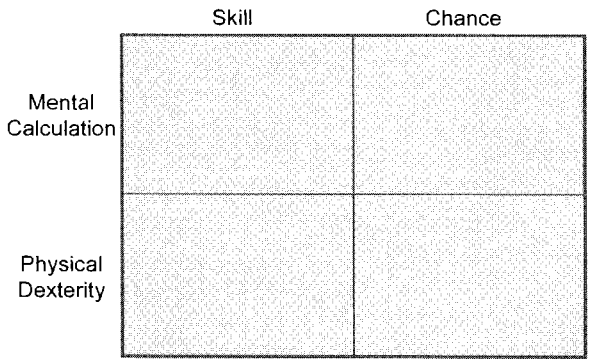
Games offer an excuse for social interaction and forming social bonds. Games that provide opportunities for players to cooperate, compete, and communicate offer People Fun with emotions that come from relationships such as amusement, schadenfruede (German for happiness at the misfortune of others), and naches (Yiddish for the pride and pleasure experienced when someone you helped succeeds). Massively multiplayer online games (MMOGs) such as WOW connect people to compete, cooperate, and to share. People playing in the same room express more emotions than those playing in separate rooms. In collocated group play, the game shrinks to the corner, and the whole room becomes the stage for play. Emotions feed off each other as players jostle each other, add content to the game, and outdo each other with witty put-downs. The most common emotion when people play together is amusement. Players laugh even at negative events. The most important emotion between people is love or the feeling of closeness and friendship between players. These social emotions also relate to computer characters, such as virtual pets in Nintendogs and WOW. Diner Dash combines Hard Fun and People Fun because to win the player must keep restaurant customers happy. Emotions from playing with others are so strong that people play games they don't like, or they play games when they don't like playing games, just for the opportunity to spend time with their friends. In subscription MMOs, as with all games strong in People Fun, players come for the content, but they stay for the connection they feel with other players.

## The Play Matrix

One valuable playtesting tool you can use is the play matrix. We developed the play matrix to help playtesters and students give context to their discussions about game systems.

The horizontal axis of the play matrix is a continuum between skill and chance. The vertical axis is a continuum between mental calculation and physical dexterity. We chose these two continua because they are core aspects of interactive experiences, and all games can be plotted along them. Think about the game of chess. It is a game of pure strategy, a type of skill. There is absolutely no chance involved. So on the skill versus chance continuum, it would be plotted to the far left. It is also a game of pure mental calculation. There is no physical dexterity required to play the game. So on the mental calculation versus physical dexterity continuum, it is plotted at the very top. When chess is plotted on both of these dimensions at the same time, it appears in the top left corner.

Now let's think about the game of blackjack. It involves chance, but the outcome is not determined purely by chance. It therefore falls somewhere to the right of center on the continuum. No dexterity is required to play, so it plots at the top of the mental calculation versus physical dexterity line.




**9.8 The play matrix**

To innovate and create more emotion we must first develop both the language and the tools to design specific emotions around gameplay. A game's core value proposition involves player choice, and choices are impossible without emotion. This makes the design of emotion central to game design. Without emotion, players lack the motivation to play. By planning an emotion profile at the start of game design, a game designer can target specific emotions with different game mechanics. Prototyping and testing these mechanics with players can gauge the success of these decisions. Offering emotions from all four types of fun broadens the opportunity for player emotion in the game, not just in response to a game event, but it is equally important to design the flow of emotions before, during, and after play. Games create emotions. By intentionally crafting and heightening emotions in player experiences in the future, games will evoke more emotions than movies.

### *About the Author*

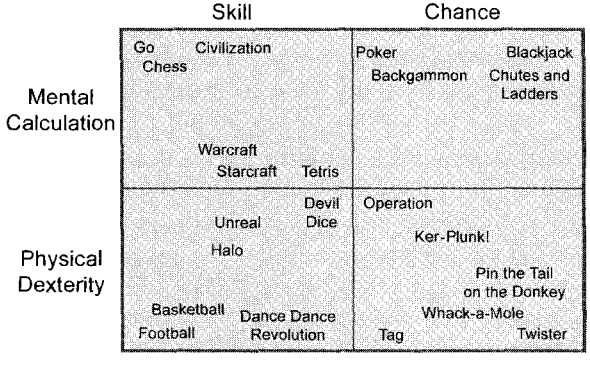
*Nicole Lazzaro is an award-winning interface designer and the leading authority on emotion and the fun of games. Her 17 years of research defined the mechanisms of emotion that drive play and reshaped the fun of over 40 million player experiences including Myst, The Sims, Diner Dash, and smart pens. She has helped clients such as EA, DICE, Ubisoft, Monolith, Sony, PlayFirst, and Maxis explore new game mechanics and audiences. A frequent speaker, she enjoys sharing her research on why people play. Prior to founding XEODesign in 1992, Nicole earned a degree in cognitive psychology from Stanford University and worked in film.*

## Exercise 9.6: The Play Matrix

Now it is your turn to use the play matrix. Plot a popular type of video game, such as WarCraft, Quake, or Atomic Bomberman, on the play matrix. Compare this to a game like Twister or Pin the Tail on the Donkey. Now try plotting a board game like Monopoly, Risk, or Clue. Describe the differences and similarities between the three types of games. What does the play matrix show you?

The play matrix is not an absolute system that produces the same results every time. Different people might have different opinions on where games plot, which is okay. Everyone's opinion has value. It is best to use the play matrix as a tool for stimulating discussion and analyzing gameplay. The goal is to get your playtesters to think about the game and verbalize their feelings.

Figure 9.9 shows the play matrix with several games plotted in each quadrant. Can you see patterns in the types of games that fall in different quadrants? Many popular video games fall in the lower left (physical + skill). Many popular board games and turn-based video games fall in the upper left (mental + skill), many gambling games fall in the upper right (mental + chance), and many games for very young children fall in the lower right (physical + chance).




**9.9 The play matrix including games**

### Exercise 9.7: Plotting Your Favorite Games

Take five of your favorite games and plot them on the play matrix. Describe what pattern you see. What does this tell you about yourself?

When conducting a playtesting session, it is sometimes helpful to ask your testers to plot your game on the matrix. Then follow by asking them these questions: (1) Is the outcome of the game determined more by chance or by the skills of the players? (2) Is the outcome determined more by mental skill or physical dexterity? Ask playtesters if they would move the game more toward one quadrant or another; what would they prefer? Different audiences often gravitate toward one quadrant of gameplay even if they enjoy different genres. For example, players who enjoy strategy games from the upper left corner might also gravitate toward other mental + skill based play, such as trivia or puzzles. Young children often gravitate toward games in the lower right, focusing on physical + chance, but as they get older, they choose games requiring mental + chance.

If players are dissatisfied with your game, they might be able to verbalize it by placing games they do enjoy in other quadrants. Ask yourself what game variables you could change to move the play experience toward a quadrant with games your target audience enjoys. For example, you might want to move from the upper right (mental + chance) to upper left (mental + skill).

The solution might be to change a variable determined by chance into a variable determined by player choice. In a physical prototype, this might be accomplished by removing dice from the system and replacing them with cards that a player can choose to play. In an electronic game, this might be accomplished by giving the player a choice of where to start or what weapons to use instead of randomly generating them.

## Taking Notes

As mentioned, it is imperative to keep notes of your playtests. You think you will remember all of the comments later on, but what you will really remember is those comments you expected to hear or wanted to hear. If you do not keep notes, you will lose all the really important details of the playtesters' reactions. These notes should be filed chronologically in a notebook or folder or entered into a database. Each time you conduct a test, write down the date of the test, all feedback gathered from your testers, and any of your own observations.

Figure 9.10 is a form you can use to capture observations and playtester comments. It is broken into three parts: (1) in-game observations, which are thoughts that you write down while the testers are playing the game; (2) postgame questions, which are questions that are designed to help elicit opinions about the key aspects of a game system; and (3) revision ideas, which is a space for you to articulate ideas for making the game better.

This form is not intended to be used instead of a test script but rather in addition to it. The script keeps the session on track; the form is a place to take notes. If you like, you can merge these two lists so that your script has room to take notes and a list of all your questions.

You might be asking yourself right now, "What should I be testing for?" Don't worry—that is the subject of the next two chapters. For now, here are some general questions you might ask of your playtesters. After you have gone through Chapters 10 and 11, you can create your own questions that are specifically geared for your own game.

You will find that sometimes not all of the questions on the form will be relevant. For example, if you are testing for interface flaws, then data about the overall play experience might be less important to capture. We encourage you to tailor this form to your specific needs. Many of the questions will be unique to a game, so it is important for you not to rely on our questions but to create your own. Questions designed to get at issues that you have with your particular game will be the most valuable to you.

# 9.10 Observations and Playtester Comments

## In-Game Observations

[Your thoughts as you watch the testers play]

## In-Game Questions

[Questions you ask the testers as they play]

1. Why did you make that choice?
2. Does that rule seem confusing?
3. What did you think that would do?
4. What is confusing you?

## Postgame Questions

[Questions you ask the testers after they have played]

### General questions

1. What was your first impression?
2. How did that impression change as you played?
3. Was there anything you found frustrating?
4. Did the game drag at any point?
5. Were there particular aspects that you found satisfying?
6. What was the most exciting moment in the game?
7. Did the game feel too long, too short, or just about right?

### Formal elements

1. Describe the objective of the game.
2. Was the objective clear at all times?
3. What types of choices did you make during the game?
4. What was the most important decision you made?
5. What was your strategy for winning?
6. Did you find any loopholes in the system?
7. How would you describe the conflict?
8. In what way did you interact with other players?
9. Do you prefer to play alone or with human opponents?
10. What elements do you think could be improved?

### Dramatic elements

1. Was the game's premise appealing to you?
2. Did the story enhance or detract from the game?
3. As you played, did the story evolve with the game?
4. Is this game appropriate for the target audience?
5. On a piece of paper, graph your emotional involvement over the course of the game.
6. Did you feel a sense of dramatic climax as the game progressed?
7. How would you make the story and game work better as a whole?

### Procedures, rules, interface, and controls

1. Were the procedures and rules easy to understand?
2. How did the controls feel? Did they make sense?
3. Could you find the information you needed on the interface?
4. Was there anything about the interface you would change?
5. Did anything feel clunky, awkward, or confusing?
6. Are there any controls or interface features you would like to see added?

### End of session

1. Overall, how would you describe this game's appeal?
2. Would you purchase this game?
3. What elements of the game attracted you?
4. What was missing from the game?
5. If you could change just one thing, what would it be?
6. Who do you think is the target audience for this game?
7. If you were to give this game as a gift, who would you give it to?

## Revision Ideas

[Ideas you have for improving the game]

A good way to begin is to identify key areas of your game you need input on and create questions geared to get feedback on those areas. Write down more questions than you plan to use and then rank them in order of importance. Then group the top questions by type as we did in Figure 9.10. You can develop your own categories of questions and structure. It really comes down to the type of information you wish to gather and how your playtesting sessions are structured.

One thing to avoid is getting carried away and overwhelming your playtesters. If you ask someone 20 or more questions in a row, they will become exhausted and might stop answering accurately. Remember, it is not the number of questions you ask but the quality of the responses.

## Basic Usability Techniques

Asking questions is a vital part of conducting a playtesting session, but there are other methods for eliciting good responses. Some of these include techniques commonly employed in usability labs. Usability research involves getting real feedback on how people use products before those products go to market so their designs can be improved. In the next sections we have listed three techniques that you can apply to game testing.

### Do Not Lead

You will learn the most from your testers by quietly observing them play. If playtesters ask a question, respond by asking them to describe what they think they should do. If they reach an impasse while playing, then you have identified something important that needs to be fixed.

### Remind Testers to Think out Loud

As previously discussed, you should ask your testers to explain to you what is going on inside their heads as they play. Their commentaries will provide a window into their expectations and choices as they play your game. Most people are not used to thinking out loud, so you might have to help them get started.

### Quantitative Data

In addition to taking notes on what players like and do not like, and on what they pick up quickly and have difficulty grasping, use feedback forms to generate data that shows trends. After a playtest session, you can use this quantitative data to prioritize the severity of issues.

Some game companies work with professional usability experts who might employ more sophisticated methods and use special facilities for playtesting. If you have the budget, this can be extremely beneficial. Not only do professional labs tend to produce superior results, but you can learn from the process and apply some of their methodology to your in-house playtesting sessions.

## Data Gathering

So far we have mostly discussed how to obtain qualitative feedback, but you might also want to go after quantitative feedback, such as recording the time it takes someone to read the rules, counting the number of clicks its takes to perform a certain function, or tracking the speed at which a player advances in level. You might also ask testers to rank the ease of use of certain features on a scale of 1 to 10, or ask them to choose between several options to see what features are most important to them.

The type of data you gather depends upon the problems you wish to solve. If the game feels clunky and people are taking too long to get started, then measuring the time they spend on each procedure to

determine where the trouble spot is might be a good approach. However, if the problem is that the game does not feel dramatic enough, a series of qualitative questions might produce superior results.

### Exercise 9.8: Gathering Data

Go back to your original prototype and think of three pieces of quantitative data you can measure that will answer three clearly defined questions you have about the gameplay.

If you are successful at gathering quantitative data, you might suddenly find yourself buried in statistics. It is nice to have stats on every conceivable aspect of your game, but if you do not know how to interpret the numbers, they are not much use. We recommend that you conduct your data gathering with clearly defined objectives in mind. Before you set out to measure something, write down your assumptions and purpose. What is it you want to prove or disprove? Then structure your test to either affirm or deny the hypothesis. For example, you might feel that a certain feature in the game is causing a problem, so you design an experiment that measures the time it takes people to reach a specific point in the game with and without that feature. You might also combine this with a qualitative approach where you ask the testers how they feel about the new feature. The combination of the qualitative and quantitative should give you the answers you are looking for.

As we mentioned above, game researchers such as those at Microsoft Games User Research have created software tools to record game data during playtesting sessions. This is a sophisticated form of keeping version notes. The developers then use specialized tools and visualization software to help analyze this data and determine the effectiveness of different game elements and features.

For example, the software might analyze the effectiveness of all units in an RTS prototype using the statistics gathered from actual playtests. If the data shows that one unit is dominating the others, the developer can then tweak that unit's variables accordingly and retest. They might make the dominating unit more expensive to build or less powerful. Or they might tweak the variables of other units to balance the game.

Although statistical analysis techniques like this are powerful tools, it is not a replacement for the designer's creative judgment on how to tweak game variables. This is because statistics can be misleading. If playtesters are new to the game, they might not be using certain units as efficiently as they could because they have not learned the subtleties of play yet. Or, at the other end of the spectrum, if the testers are experienced with the game, they might have set opinions about how to use the units and not see some innovative new way of playing. The bottom line with all data analysis is that it is a good tool that should be used in combination with other playtesting methods to have the best overall results.

## Test Control Situations

A tool for improving the efficiency of your playtesting sessions is to utilize controlled game situations. A controlled game situation is when you lay down parameters that force players to test a specific portion of the game mechanics, such as:

- The end of the game
- A random event that rarely takes place
- A special situation within a game
- A particular level of a game
- New features

You can set up to test different aspects of your game independently of one another during different prototyping stages. In the foundation stage, you can test basic functionality without worrying about balancing or fairness. In later stages, you might want to test for loopholes and dead ends. Or you can focus sessions on the accessibility of the interface or navigation system.

# How Feedback from Typical Gamers Can Help Avoid Disappointing Outcomes

by Bill Fulton, formerly of the Games User Research Group, Microsoft Game Studios

## *The Problem*

Compared to the giddy expectations of the developers at the kickoff of a project, most games are disappointing: commercially, critically, or both. After all, few people set out to spend that much time and money to produce a game resulting in ambivalent reviews and low sales. Solving this problem is one of the holy grails of game development because it would remove substantial risk from making games.

## *The Traditional Analysis of This Problem and the Solution*

Why does this disappointment happen? The traditional analysis of the problem is that teams are too close to their game to see it objectively, much the way that many parents seem to believe their child is above average. Because of this analysis, myriad ways to get feedback from fellow game development professionals (coworkers, publishers, journalists, playtest teams, etc.) has sprung up. While the traditional analysis has some merit, and the solution to combat the problem is quite useful, it doesn't seem to explain (or fix) the whole problem. Most games still fail to find critical or commercial success.

## *An Alternative Analysis and Solution*

An alternative analysis for why games don't live up to the expectations of the developer is that professional game developers aren't like the people for whom they are designing the game: typical gamers. Game developers are so knowledgeable about games and game development that they have a hard time designing for the typical gamer, who knows comparatively little about games (see Figure 1 for an illustration).

This situation of game developers being very unlike typical gamers suggests that when the game is fun for the developers, it might not (yet) be fun for typical gamers, who might find it too hard or might not find the fun that is in the game. This is similar to the way that modern art is often unappreciated by anyone without a degree in art history. But to make games for the masses, it is the responsibility of the game developer to show typical gamers how to have fun with the game.

Many publishers and developers have come to see the problem this way, and they have engaged marketing research firms to do focus tests on the game to combat this problem. But often the goal of the focus test is to learn how to sell the game, not how to make the game more fun and accessible for more players. Furthermore, focus tests are often done too late in development to make many changes to the game. Because of the constraint of schedule and emphasis on selling as opposed to improving the game and time, many game developers are mixed about focus testing.

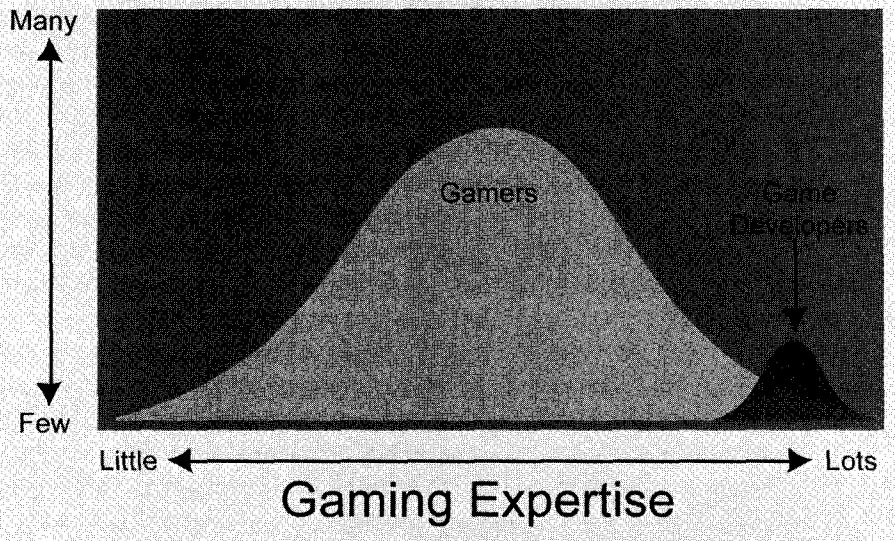



**Figure 1**

*Gaming expertise: a comparison of hypothetical distributions of gaming expertise for typical gamers and typical game developers. This figure illustrates how all game developers know more about games than all but the most dedicated gamers. The point of this figure is to show how game developers can't simply make games that are only accessible to people like themselves if they want to make a game that the majority of gamers can understand and enjoy.*

## *User Testing from an HCI Perspective*

Getting feedback from consumers for the purpose of improving products is a major goal of the field of usability, a subset of the human-computer interaction (HCI) field. Most major software companies have usability departments staffed with HCI professionals. The games industry has been slow to adopt this practice.

This is changing; the use of HCI professionals in game development is gaining greater acceptance. One major game publisher has been doing some form of usability work on games since 1998, but other game publishers and developers are beginning to employ usability professionals as a way to make their games more fun. As more game developers and publishers do usability testing on their games in development, the typical quality of games from those developers and publishers will only get better.

## *An Example of User Testing from Age of Empires 2: Age of Kings*

Age of Empires 2 (AoE2) is an excellent example of how user testing from an HCI perspective can improve games. The first AoE game was both a critical and commercial hit. In fact, it sold so well that the only way the sequel (AoE2) could sell any better would be if it expanded beyond the kinds of gamers who played the first AoE.

The developers and publisher decided to aim for the stars and make the game accessible to nongamers. AoE2 would be a game that someone who had never played a computer game would be able to pick up and play. This was a lofty goal because AoE2 is a complicated game, and nongamers lack the background to learn

the game on their own. We also knew from testing that the first AoE was a difficult game to learn for some experienced gamers.

To achieve this level of accessibility, it would be necessary to provide a robust tutorial and do a great deal of user testing. The details of the testing are better described in a different article, but the following anecdote from the final test of the tutorial gives a bit of flavor.

The final test of the tutorial was done on a Saturday at 10 a.m. At 9 a.m., I noticed an elderly lady (maybe in her 70s or 80s) waiting outside the building. I thought she was lost or looking for someone, but it turned out that she had been scheduled for the test. I was surprised, but she technically fit the kind of people we were looking for (never played a retail computer game, could operate a computer, was older than 40), so I let her in. I apologized for her being given the wrong time for the test, but she told me that she was told 10 a.m. was the time, "but always showed up an hour early for appointments."

I was a little concerned that she might be put off by the nature of the game (build a nation, raise an army, destroy your neighbors) and offered that she could leave if she wanted to. But she thought the idea of testing a game was "interesting" because her grandkids played them, and she wanted to be helpful. So we let her go through the test like all the other middle-aged folks. It was a bizarre sight to see dozens of parent and grandparent types playing Age of Empires 2 in the lab.

After they had completed the tutorial, they were instructed to play a random map game against the computer. Toward the end of the test, I went by the elderly lady and saw that she had the semblance of a nation going—she had several villagers collecting all four resources, and she had many of the right buildings built (barracks, granary, mining, etc.). When the Mongol hordes came over the hill and invaded her nation, she did

This type of controlled test situation is vital because it allows your testers to repeatedly experience an event under a variety of conditions. For example, let's say you were designing Monopoly, and you wanted to test the "going to jail" feature. Instead of waiting for it to happen by chance, you could force this event to occur and see the results under various conditions. How does going to jail affect a player who owns very little property versus another player who owns a vast amount of property? You might choose to start the game in the middle with the player already in jail, then play for 30 minutes and observe what takes place. Then repeat the experiment with a change in the player's financial position.

## Exercise 9.9: Test Control Situations

Create three test control situations for the original prototype that you created. Describe the purpose of each control and how it functions. Then try it out and make note of your observations.

You do not have to have your testers start from the beginning and play the game all the way through. You can start at any point: beginning, middle, or end. You can make one of your players grossly more powerful than the others and see what happens. Testing control situations is not about being fair to your testers or making sure that they enjoy the game. It is about seeing what happens under every possible condition. Many of these are rare cases and need to be forced so that they materialize at key moments in the game. This way you can see how it affects the gameplay. Does it ruin the experitence? Or is it a nice surprise?

Also, when testing, your time is limited, and some games take days to play. If you do not have the time, you will find yourself relying on test control situations almost every session. One of the most common control situations is starting a game near the end. To do this, you set up the prototype to simulate where players would be in the final conflict. You define the parameters to create the type of ending that you want to test, and then you start the session from this

several things right—she hid her villagers and started to build a (woefully inadequate) army. Unfortunately, she was too slow and got overrun; Age of Empires 2 had just crushed grandmother's nation. When I escorted her from the lab, I asked her what she thought. She said she could see how her grandkids would like it, but the game wasn't her "cup of tea."

While the grandmother didn't enjoy the game, after completing the tutorial she was able to understand the basics of the game and responded reasonably to being attacked. This was a dramatic improvement over the original AoE, where sometimes even experienced gamers got stuck and couldn't figure out the game without going to the manual. The reliance on testing AoE2's tutorial with real people, not just paid game industry professionals, resulted in a game that almost anyone can pick up and play.

In the end, AoE2 sold dramatically more units than did the first version, in large part due to improvements to the game that stemmed from doing user testing throughout the development of the game.

### *About the Author*

*Bill Fulton is one of the founders of the Games User-Research Group at Microsoft Game Studios and worked there between 1997 and 2004. The group's mission is to get feedback from typical gamers for the purposes of improving games in development, such as the Age of Empires series, the Halo series, Project Gotham Racing series, and Forza series, throughout the development process. In 2004, Bill moved to game design and worked on the PC and Xbox 360 game Shadowrun. To read more about user research and games, see http://www.mgsUserResearch.com/publications/.*

control point and study how the end game plays out. Because it is a controlled situation, you might be able to test the end game four times in one hour.

This is one of the reasons that cheat codes exist for electronic games. They are tools that the game developers use so that the team can test control situations. For example, the designers of a real time strategy game might find it helpful to have a cheat code for turning off the fog of war. This would allow them to better monitor the AI for the computer-controlled units, while a cheat code for infinite resources would allow them to test how the game plays with the maximum number of units. It has become a tradition among game developers to leave the cheat codes in the final releases of game titles. One reason is so that players can have fun experimenting with different game situations that would otherwise be impossible.

## Playtesting Practice

We have found that it is easier for designers to learn the process of playtesting by using a game that they have no emotional connection with—it is easier to be objective when your design skills are not on the line. For the next few exercises, we will take a simple, familiar game and use it to learn the essence of playtesting. As we do this, much of what we discussed earlier will become apparent, and some new concepts will be introduced.

### Connect Four

Many of us grew up playing the game Connect Four. It is where two players take turns dropping red and black checkers into a vertical grid. The first player to get four of their units in a row (horizontally, vertically, or diagonally) wins the game.

### 1. Create the prototype

First, you need to create a simple prototype for Connect Four. To do this with pen and paper, draw a grid, seven squares wide by six squares tall, on a piece of paper. One player will use a black pen to represent black units on the grid and a second player will use a red pen to represent red units. Make sure to have a stopwatch handy to time your playtest sessions. Next, decide who goes first. Each player, on his turn, chooses a column in which to place a unit. He then draws units at the bottom of the chosen column as if gravity dropped them from the top. Units stack on top of one another when they "land" in the grid.

### 2. Prepare your questions and script

Write down the questions you plan to ask in advance and prepare a script for the session.

### 3. Recruit testers

Go out and find two playtesters.

### 4. Playtesting

Introduce your testers to the game and let them begin playtesting.

### 5. Alternate the grid size

Play according to the previous description a few times. Use your stopwatch and mark how long each game takes to resolve next to the game grid. Next, draw the game grid at 9 × 8 instead of 7 × 6. Play this a few times using the same rules. What happens to the play experience in the 9 × 8 version? What happens to the time it takes to resolve? Which version is more interesting? Why? Does changing the grid size give you ideas for changing other variables?

### 6. Alternate the objective

Go back to a 7 × 6 grid, and this time change the objective, so that winning requires connecting five in a row. Play this a few times. What happens? Does changing the objective give you ideas for changing other variables as well? For example, you might find that a 7 × 6 grid is too small. If so, try the "connect five" version on the 9 × 8 grid.

### 7. Alternate turn procedure

Now go back to the original rules (i.e., Connect Four on a 7 × 6 grid). This time change the turn procedure. Players can now place two units on each turn; the second unit must be placed in a different column than the first unit. Play the new version of the game. What happens? How does this change affect the players' strategies? Is the game still balanced?

### 8. Alternate number of players

Go back to the original rules (i.e., Connect Four on a 7 × 6 grid). This time, change the number of players to three—you can act as the third player yourself if you do not have another playtester. Use a third color for the new player. Take turns as usual and play the new version of the game. What happens? How does this change affect the players' strategies? How does it affect the social dynamics of the game?

## Final Analysis

Clearly changing system variables has a direct effect on the play experience, and the only way to determine this effect is through playtesting. How do these alternate versions compare with the original? How did each change affect the player experience?

Compile your notes and analyze your results. What changes would you make to the game of Connect Four as a result of this playtesting session? Do your notes point to any conclusions?

The previous exercise exposes you to the basics of playtesting and iterating on the fly. This works great if you are testing a physical prototype like the Connect Four game we created. However, the same process can also take place over a series of tests as you change and iterate your digital prototype. We used the Connect Four example so that you could quickly and easily see the change in the game experience over several iterations. Understanding and practicing this iterative process of playtesting and revising over and over is fundamental to the creation of good games. In the next two chapters, we will test your own original game in the same way—though it might take longer than the Connect Four example—as you iterate and improve your design over a number of playtests.

## Conclusion

As you can see, playtesting is an involved task, but it is a critical part of game design that cannot be rushed through or sidelined. Your job as a designer is to make sure playtesting remains at the heart of the game design and development process. As soon as you let it slip into the background, then you give up your chance to see your game as the players will see it when they open the box for the first time.

Playtesters are your eyes and your ears. They allow you, as the designer, to keep your finger on the pulse of the game, even after you have played it hundreds of times. If you learn to listen to your playtesters and analyze what they are saying, you will be able to see the game mechanics for what they are, not what you want them to be or imagine they should be. And that is the key to good design. It is understanding what it is you have created and being able make it even better, not in one flash of brilliance, but step-by-step over months and even years. If you can master this process, then you have mastered one of the key skills to being a great game designer.

# Designer Perspective: Rob Daviau

Senior Game Designer, Hasbro Games

*Rob Daviau is a prolific designer of board and card games who works on staff at Hasbro Games. His credits include Risk 2210 AD, Axis & Allies Pacific, Heroscape, Star Wars: Epic Duels, The Game of Life: A Jedi's Path, Battleship Card Game, Risk: Star Wars (both editions), Clue DVD, and Nemesis Factor.*

## *On getting into the game industry:*

I played games all my life and spent a lot of time fading in and out of role-playing campaigns. After five years as an advertising copywriter, I was looking for a change. I applied as a copywriter for Parker Brothers (mostly writing rules and box bottom copy) at the exact time they were looking for a game designer with a writing background. I ended up getting the designer job, and the bulk of my work still involves copy-heavy projects. In my interview, I named two of my favorite games from childhood. It turned out that the guy interviewing me had designed both of those games. It was luck on my part, but I advise that as a good tactic when interviewing somewhere. Just don't make it look like you planned it.

## *On favorite games:*

I admire games that create a whole new way to think about games—games that create a new type of game. So my top five (in no order) are: Dungeons & Dragons, Diplomacy, Magic: The Gathering, bridge, and Monopoly. I go through all sorts of favorite games during the months and years, but it really depends on who I'm playing with and what experience I'm looking for. There are big differences between picking up an Xbox RPG to play solo versus playing a game with my young kids versus playing a game with my hardcore gamer buddies. I just like the act of playing.

## *On inspiration:*

Every game—okay, most games—have something in them that is clever or new or cool. I keep a mental list of the cool mechanic, the cool piece, the new storage tray, or different artwork in the games I play. I think of it as creating a palette to paint my own pictures. I am also inspired by the narrative potential of a game, even the nondigital games that I create. I want my games to tell a story or evoke a mood or create a moment of narrative tension. Trying to do that with a deck of cards can sometimes be a tall order.

### *On the design process:*

I usually think of the feel first and then put in mechanics to evoke that feel. Do I want the game to be tense? Exciting? Dramatic? Full of twists and turns? Relentless? Do I want the players to be casually involved or intensely focused? From there I start creating a game that tries to fit the mood I am going for. This is probably backward from how a lot of people design games.

### *On prototypes:*

I'm a nonvideo game designer, so I use prototypes all the time (even when I designed games with DVDs I had some sort of prototype). Because my games live in the physical world and are made of plastics, paper, and (sometimes) electronics, it is necessary to get to a physical representation very early. My line of work has a lot of questions about board size and plastic design and piece storage issues that are unique to the board and card game world. My office has a full model shop and engineering lab that can pretty much create anything I can dream up.

### *On designing Risk Star Wars: Clone Wars:*

Instituting Order 66 into the Risk: Star Wars: Clone Wars edition was tough. We had read the script, but the movie wasn't out yet. The issue was: How do you have one person's armies suddenly be controlled by the other player in such a way that it is still a game? Why doesn't the person issue Order 66 at the start of the game? How can the other player win after it is called? Eventually we came up with a system where Order 66 became (statistically) more successful the longer you waited, so you always had that feeling of waiting one more turn to better your odds. Then we put in a shoot-the-moon win condition for the Republic player where he could, with a ragged bunch of troops, still have a chance of snatching victory from the jaws of defeat.

### *Advice to designers:*

It's very easy to hide behind a gimmick—graphics, sound, a license, nice video segments—but game players are smart. They'll figure out if it's all smoke and mirrors with no real game. What makes your game different? If it's just more of the same as that game or just this game mashed with that other game then it's just a rehash. When starting a game, remember to question everything. Even if all those crazy ideas eventually are rejected or don't pan out, at least you started someplace new. The business people in the company will always try to direct a game toward the familiar and safe. It's your job to push back against that . . . because you might be the only one.

# Designer Perspective: Graeme Bayless

President, Kush Games

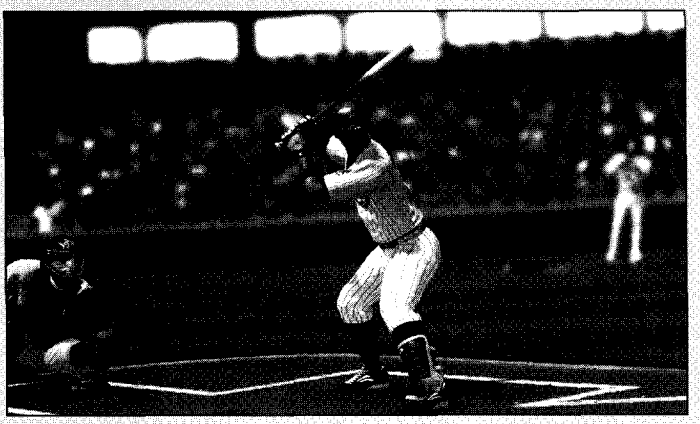
*Graeme Bayless has been directing computer game development for 20 years. His long list of credits includes Battles of Napoleon (1991), Kid Chameleon (1992), MissionForce: CyberStorm (1996), Madden NFL (2001, 2002, 2003), NFL Street (2004), NHL 2K7 (2006), and Major League Baseball 2K7 (2007).*

## *On getting into the game industry:*

Well, I got in a long time ago (1987) when the industry was still trying to find its identity. I had always been a gamer (I've played games as my primary form of recreation since I was 8, and I submitted my first paper game design when I was 14) and thus I spent my weekends at the local game store, playing various paper games or miniatures games. One day I noticed a posting on the bulletin board of the store I frequented. The posting was an advertisement for a part-time weekend playtester. I figured, "Hey, I can do that," especially because the company was Strategic Simulations Inc., a company that made computer war games that I played heavily.

I applied and got an interview with their manager of testing (who was also their manager of customer service). As the interview went on, she became more and more impressed with my game knowledge, so she asked me if I'd like to interview for their customer support position. I agreed and came back for another interview. The second interview round included a programmer who was temporarily helping customer support until they could hire someone. This programmer was impressed with my design sensibilities, and suggested I return for a third interview for a game developer position (effectively an associate producer). I agreed, and the next thing I knew I was at lunch with the company president (Joel Billings) and vice president (Chuck Kroegel). The interview went well, and I was hired. I spent the next 30 months shipping about 30 SKUs, operating as the testing department, writing manuals, and participating in design on numerous war game and RPG titles.

## *On favorite games:*



- *M.U.L.E.:* This was a superb title published by Electronic Arts in 1983. It was simple yet one of the most elegant game designs ever. The fun factor was undeniable, and it had replay value because the game was randomly generated every time you played. The most memorable part of this game is the trading interface, a truly brilliant game design. Players needed resources of varying types and would

have to bid on them through an interface where players literally scrambled for resources with the seller, able to dance higher and higher on price as folks raced to buy. Brilliant and fun.

- *Advanced Strategic Confrontation:* This was the rough translation from the Japanese name. The game was a Sega Genesis title released around 1990 that became the inspiration for the entire series of Panzer General games that kept Strategic Simulations going for years. This game was incredibly original, with a simple war game style that made war games accessible for the rest of us. All units had "10 hit points" and could heal by sitting on friendly cities. Infantry captured cities, and tanks were for killing other units. They had artillery and air units, allowing the full rock, paper, scissors strategy matrix. Though it wasn't released in the United States, it was extremely successful in Japan, and it still resides in my collection.
- *Star Control II:* This is the only sequel on my top list. It took all of the arcade fun of the first game and combined it with a single player RPG story that was both fun and, at times, hilarious. The replay value was mostly in the arcade mode, but the RPG side was deep enough that it was worth playing more than once to see what you might have missed. The only action RPG of its type, Star Control II has never been successfully imitated since. Note that the sequel, Star Control III, did not live up to its predecessors and effectively terminated the franchise.
- *EverQuest:* I'd be remiss to leave this off my list, given how much of my life it has sucked out of me. The first true 3D MUD, EverQuest, is undeniably addictive (more so than alcohol or tobacco, some might argue) and plain old fun. It is the perfect operating example of how powerful the concept of "toy factor" is in a game—the base concept being that the more toys players have to play with and sort through, the better. Of particular note regarding EverQuest is the incredible change the game has undergone, literally evolving to mimic the desires of the player base. EverQuest is perhaps the best example of a living game we've ever seen.
- *Fallout:* The original post-apocalyptic RPG, this masterwork helped maintain the vitality of the single player RPG. Fallout had a deep storyline, yet it didn't overwhelm the player with so many options that they got lost. It was long, but not so long that players couldn't finish it in a reasonable time frame (unlike the sequel). Add in a nice mixture of dark humor, and you have a game that is still top of the heap for single player RPGs. Fallout spawned two sequels, and neither has lived up to the original, unfortunately.

## *Advice to designers:*

I would urge any prospective designer to become a complete package. It is not adequate to merely learn how to generate good designs; a skilled designer must also know how to communicate those ideas to others both in written and verbal form. A good designer must also be able to communicate concepts through visual tools, allowing the viewer to see what is in the designer's head. Likewise, interpersonal skills are also key, as a designer must sometimes negotiate for resources and/or for the ability to take a product in new directions when that designer isn't also the company CEO.

I will note that the theme of this book—and how it approaches game design—very much mirrors my own beliefs. I strongly support the idea of paper design prior to electronic implementation. Playtest your ideas thoroughly long before a coder codes. Use prototyping whenever possible to avoid inefficiencies that might end up costing you features later when time and money limit the scope of your project.

## Further Reading

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## End Note

1. Thompson, Clive. "The Science of Play." *Wired*. September 2007.