

Katherine Isbister

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GAME

USABILITY

ADVICE FROM THE EXPERTS FOR ADVANCING THE PLAYER EXPERIENCE



Game Usability

Advice from the Experts for
Advancing the Player Experience

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Game Usability

Foreword

Randy Pagulayan
Microsoft Game Studios

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Microsoft Surface

Games User Research at the Crossroads

Gaming and user research on gaming have finally come of age, and for many of us it's been a fast and furious ten years of industry growth and progress in research and practice. Just taking a quick look at the scope and depth of this book provides clear evidence of the health and progress of the field. With 23 chapters by distinguished authors from industry, academia, and consultancy, this volume represents a watershed in research on gaming and clearly provides an excellent overview of where we are. At this time, we feel games user research is at a crossroads. With our combined experience, we've seen and been part of an evolution in applied research that feeds into some of our thoughts on where gaming research can go. However, rather than predicting trends, we'd like to give our perspective on the pitfalls and promise of user research on games in hopes that the next ten years can be as fruitful as the past decade.

One size fits all – it's all story, it's all mechanics

One of the pitfalls of thinking about game design and research is the seduction of a dogmatic approach. The arguments for dogmatic approaches are often passionate and persuasive containing compelling examples. Typical example of a dogma is “the story is the most or only critical element of game design”. After all, the argument goes, shooting alone is not compelling unless the story is good. Alternatively one could argue that mechanics are the only critical element of game design. What's the story line for Guitar Hero or Hexic?

Like most dogmas these assertions contain a kernel of truth that has been over-extended. Making a great game depends on many elements (mechanics, story, visuals, sound, characterization, etc.) and the relative importance of these elements varies from game to game and genre to genre. In addition the elements are complementary and not mutually exclusive. It's time to think of games holistically. When we think of movies, novels, paintings, and great meals, we already know that all the elements combine for great experience. Let's apply a lesson from Gestalt psychology to games, “The whole is different than the sum of the parts.” There is a “Pragnanz*” in game design where it all comes together; this is just like when we look at a set of dots but perceive the closure of a circle. The underlying principle

is that it's not the dots but their relationship that matters. The important corollary for game design is that a single failed part (something out of place) can disrupt an otherwise great experience. We can start to think of game design in terms of what's blocking the fun. In other words, what design element was out of place that prevented closure on the intended experience? Let's move away from useless dogma and take the road to more productive thinking.

Games are art

A common discussion within the games industry revolves around the question of games being art...or not. Many industry luminaries will gladly propose that games are indeed a form of art, and of course, those who aren't in the games industry will claim the opposite. The debate over whether games are art will no doubt continue over the long-term. So what does that mean for us, as we push forward the discipline? We don't think our role is in helping to decide which side is right. In fact, we suggest not wasting time engaging in that debate. Instead, we should approach games research in a way that is more meaningful and useful to the creators and consumers of the medium. We should focus more on what the consequences are for a given perspective. It's not so much whether games are art or not. The more relevant question (in our opinion), is "What kind of art?" We must make a distinction between fine art and commercial art. In many cases, games lean toward commercial art. In this case, the research focus becomes clearer and debates should revolve around the clarity of the communication of the message from the artist to the consumer. We often refer to this as "realizing the design intent." Of course, the pitfall here is a damaging belief that games research can end up *dumbing down* one's creative vision, which we know is untrue. Just be ready to educate.

The gulf between research and practice

It seems that games and entertainment are on the verge of becoming the next hot research topic, which puts us at risk for a lot of the same mistakes made when new areas of application surface. For example, the web became very prevalent in the HCI and research fields, and web "research" began to permeate everything from conference presentations, to new books, to becoming the focus of doctoral dissertations. Not all of that particular body of research was ineffective, but there definitely were more conclusions and results that were presented as novel but were already known from existing research on basic human factors or perception. At our current crossroads, we need to continue to understand the basics and fundamentals of research while using those skills to look ahead. Game designers and the games industry at large can be extremely critical; thus, researching the right questions becomes imperative as opposed to rehashing existing psychological constructs for research, and calling it a game. We must maintain the rigor and skill sets of good research (applied or basic research),

but we also must be honest with ourselves in terms of what truly is important to games. Otherwise, we end up with researchers and practitioners performing research that ultimately serves no one but ourselves (which isn't very good).

Relying on people successful in other fields – spread of expertise

An admittedly touchy, and controversial, subject is what background is most useful for a commentator who aspires to contribute to our emerging discourse on game theory and research. The most insightful and useful commentaries will come from folks who combine deep knowledge of games with deep knowledge of some other fields. For example, those who know both games and film can provide a fresh perspective on the age old question of the relationship of games to film. Conversely one of our pitfalls is something philosophers call “the spread of expertise.” The spread of expertise occurs when a noted authority from one field extends his/her thinking to a new field without really coming to grips with the history and culture of that field. The result will, all too often, be an unreflective dabbling in the field that is counterproductive. For example, some noted authors have advocated the wholesale importation of reinforcers into productivity applications. It's hard to image anything more annoying than a message “You won !! Your order will be shipped to you tomorrow!!!” or “Great work!!! You have now achieved the level of Master Jedi for this database!!!” While such feedback could be amusing the first time, we predict its charm would wear off quickly and it would soon be annoying. We also imagine that after a long struggle to complete a task with a productivity application, the congratulatory message would provoke the response “No kidding you made it hard enough.” That's hardly the intended effect. The gaming research field can benefit greatly from new and fresh perspectives, provided those offering them have done their due diligence in studying games and their unique challenge and culture.

Promise

After a promising start in the early 90's, research to determine which usability method was the most effective in the real world abruptly stopped. This setback has been partly attributed to an unfortunate article by Gray and Stalzman (1998). In it they argued that evaluating user research methods in business required a classical experimental approach. While this article may have provoked some interesting discussion, it served to stifle a promising area of research on the relative effectiveness of methods. Fortunately, research on methods in games has proceeded in a real world context and has taken a case-study approach as opposed to a formal experimental approach. Several authors have described the contribution of a research design collaboration to the commercial success of games. This is a trend to be supported

and encouraged. Perhaps games research can reinvigorate efforts to evaluate methods for productivity applications in the context of real world products and tools. Given the sterility of formal experimental methods for real world applications, it would be a welcome change.

A new behavioral/environmental emphasis

Along with a focus on evaluating methods in the context of the real world, we also feel strongly that the next evolution in games research will be taking these methods, tactics, and techniques (many of which are listed in this book) and focusing less on cognitive states and emotional taxonomies, and more on opportunities for player behaviors. Games can become complete worlds for our users, so now more than ever we need to understand the interactions between the player and the environment, understand the player's behavior within a virtual world, and understand the player's ability to detect the infinite possibilities created for them. To borrow from James Gibson, a shift in emphasis from "inside the head" to "what the head is in" lends itself quite well for research that is actionable and accessible to both the researcher and the game designer.

So there it is, games user research has taken leaps and bounds over the past 10 years, as evidenced by the content of this book. As the editors point out, the book represents a snapshot of where we are today, which is quite remarkable given the state of games user research just 10 years ago. We encourage the readers to use this resource as a great starting point for strengthening the discipline while taking us into the future. But most importantly, if you were to only take one thing from reading this forward, take this thought...Life is short, have fun.*

Keep it tilt,

-Randy Pagulayan & Dennis Wixon

April, 2008

* Editors' note: Pragnanz is a term from Gestalt theory in Psychology, meaning a sort of ordered and balanced image that the mind pulls together when perceiving and making sense of the world.

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PART I

WHAT IS USABILITY AND WHY SHOULD I CARE?

CHAPTER ONE

Introduction

Katherine Isbister and Noah Schaffer

1.1 Why Usability Now?

More and more game developers (and educators in the field of game development) are talking about user research and usability. There have been articles in industry venues such as *Gamasutra*, and workshops on usability at the annual Game Developers Conference. You may be wondering what exactly the excitement is about, and what it has to do with your daily challenges as a game developer.

There are many reasons for the increasing interest in user research for games that led us to feel the time was right for an edited volume about what's state-of-the-art in this emerging field:

- *Developers and publishers are trying to reach out to broader audiences.* User research becomes more crucial to development teams when the target audience is someone other than people who closely resemble the developers themselves.
- *Game development teams have grown.* User research can help to keep larger teams “on track” in their efforts—it's harder to manage by intuition when one person can't have all the many facets of the design in their head.
- *Proliferation of platforms.* Designing for new input modes and modified platforms, or for many platforms at once, creates usability problems that user research can help to anticipate and lessen.

For these and other reasons, more and more game developers are turning to tactics that emerged from the study of productivity software, to help fine-tune their efforts.

1.2 What Exactly Is Usability? How Is It Different from Playability and Fun?

In the realm of productivity tools, such as word processors and banking websites, *usability* has come to mean the extent to which the software is intuitive and effective for a

person trying to accomplish the tasks at hand. Making software usable means paying attention to human limits in memory, perception, and attention; it also means anticipating likely errors that can be made and being ready for them, and working with the expectations and abilities of those who will use the software. Traditional usability testing, then, has been testing with people in the target user group to see whether the software meets expectations in these practical concerns about task. In more recent years, productivity software designers have also become interested in a broader sense in the overall *user experience*—what it is like to interact with the software, including how engaging the experience is, regardless of the end goals. This leads to testing techniques that are concerned with qualities such as engagement, flow, and fun—qualities that bring user research closer to the primary concerns of game developers.

Game developers have evolved two main tactics for collecting play feedback and reincorporating it into design: *playtesting* and *QA* (quality assurance). In playtests, the focus is on whether the game is fun to play, but also where players may be getting stuck or frustrated (similar to usability test concerns). Playtests are conducted when there's a playable version of the game, but as early as possible in the process, to help correct any issues before full production. QA is testing done fairly late in the development process, focused mostly on catching bugs in the game software, but also aiding in tuning play, for example adjusting the difficulty level of the game.

In this book, you'll see that each author has a slightly different way of using these terms. We see this as an indication that the field is still evolving—the differences reflect the origins of each author's knowledge and practice. If you keep in mind the broad definitions above, you should be able to follow along regardless of these variations.

1.3 What to Expect from This Book

As of yet, no “one size fits all” easy approach exists to incorporate user research into game development. Rather, there are a range of tactics and tools that may be appropriate depending upon the project and the resources at hand. As developers adapt and apply more and more of what's known from traditional usability and user research to games, the repertoire of tactics continues to grow.

This book is not a definitive primer on how to do game usability. Instead, it is a collection of techniques and perspectives—a snapshot of what's available today, and of where things may be going. We've gathered insights from game industry practitioners, ranging from straightforward advice from a small studio about why you should do usability (see Chapter 3), to discussion of elaborate instrumentation techniques from a company on the cutting edge of incorporating user research into their development process (Microsoft—see Chapter 15). There are developers from around the United States, as well as from Europe and Asia. We've also included input from researchers, many of whom serve as active consultants to game developers (for example, Lazzaro, Chapter 20; Mandryk, Chapter 14), and all of whom take very seriously the unique challenges of measuring player engagement and

satisfaction with games. Whatever your resource level and interest level, we believe you'll find something of use in these pages, including:

- Advice for how (and why) to fire up your company about usability and user research (see Chapter 2),
- Bread-and-butter techniques that have broad relevance (see Part II),
- Special contexts, such as casual games, and types of players, such as players in other cultural markets, for example Japan (see Part III),
- Advanced tactics to try out, such as biometrics and instrumentation (see Part IV),
- A use matrix that helps you decide what techniques may be appropriate to the project and phase you are in (see Part V),
- Interesting perspectives on how gaming has influenced the broader world of design and user research (two interviews in Part V).

1.4 Tips for Using this Book

If you are a student, or someone new to the area of usability:

We suggest that you begin with Parts I, II, and V, then pursue Parts III and IV depending upon how your interests evolve once you have a broad feel for this area.

If you are someone with an existing basic knowledge of usability, interested in new techniques.

You may want to skip to Part IV of the book, to learn about methods in the vanguard of user research for games.

If you are a manager or developer interested in promoting usability in your organization.

Part I has tips for how to inspire your company and how to successfully implement usability practices in your team. Part V has some inspirational advice and commentary about how games are at the cutting edge of user experience, as well as a matrix for what techniques may be useful when.

1.5 Acknowledgments

We'd like to thank Regina Bernhaupt for the wonderful International Conference on Advances in Computer Entertainment Technology (ACE) 2007 workshop on methods for evaluating games, at which quite a few of the book's authors were gathered. Regina has been a valuable advocate for bringing user experience in games to the conversation in traditional user research circles. We'd also like to thank the staff at Morgan Kaufmann for their help in shaping this book, and in bringing it to press. Thanks also to Jason Della Rocca, for his excellent editorial comments along the way.

CHAPTER TWO

Organizational Challenges for User Research in the Videogame Industry: Overview and Advice



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