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CHAPTER

SERIOUS GAMES DEFINED

What is a “serious game”?

Ask most game developers and hardcore game players about “serious games” and you will learn that *all* games are serious. In other words, developers and players take their games very seriously. They live to make games, and they live to play games. What could be more serious than that?

To the population at large, however, the term “serious games” sounds like an oxymoron. The two words seem mutually exclusive. How can something be both serious and a game?

So, again, what is a serious game?

A simple explanation that many professionals use in this field, with some reservations and qualifications, is: *A serious game is a game in which education (in its various forms) is the primary goal, rather than entertainment.*

This definition helps clear up the seeming oxymoron, but it no doubt also raises the hackles of people (both game developers and educators) who see entertainment and education as being at odds. It is the contention of this book, however, that not only are education and entertainment *not* in conflict, but that there are many places where the two overlap and where each side can use the tools of the other to achieve their goals.

To that end, in this chapter we will talk about games and the importance of games and play to human culture and activities—including education and learning—and why game designers are in a unique position to help educators.

WHAT IS A GAME?

Everyone knows what games are. They've been playing games since they were children. This universal experience, though, and the broad scope of all possible games, makes it difficult to have a single definition of the word "game" that everyone agrees on. To some, games require competition, one or more players, or teams striving to "win." But what about games played alone, with no direct competition? In his book, *Serious Games*, Clark Abt presented a similar definition, but he also talked about the limitations of that definition:

Reduced to its formal essence, a game is an activity among two or more independent decision-makers seeking to achieve their objectives in some limiting context. A more conventional definition would say that a game is a context with rules among adversaries trying to win objectives.

The trouble with this definition is that not all games are contests among adversaries—in some games the players cooperate to achieve a common goal against an obstructing force or natural situation that is itself not really a player because it does not have objectives.

To others, games require rules. To still others, rules are anathema to fun. The philosopher Bernard Suits, in his book, *Grasshopper: Games, Life and Utopia*, had this to say about rules in games:

To play a game is to engage in activity directed towards bringing about a specific state of affairs, using only means permitted by rules, where the rules prohibit more efficient in favor of less efficient means, and where such rules are accepted just because they make possible such activity.

Yet all these definitions about competition and rules seem to suggest that fun and play have little to do with games. Popular opinion would surely disagree. But is there a difference between play and games? Are all games a form of play, or is play part of a game?

The dictionary is no help in this debate. The Webster's Ninth New Collegiate Dictionary from Merriam-Webster lists four broad definitions of "game" (play, tactic, competition, and animals), each with two or three subdefinitions. It seems that games are another of those nebulous concepts that we know when we see but have a hard time defining.

Johan Huizinga, in his 1950 book *Homo Ludens*, provides a definition of "play" that seems equally applicable to "game." He described six characteristics of play:

1. Voluntary, a form of freedom: "play to order is no longer play."
2. Pretend: "play is not 'ordinary' or 'real' life."
3. Immersive, or taking up the player's full attention.
4. "It is 'played out' within certain limits of time and place."
5. Based on rules: "it creates order, is order."
6. Social, creating a social group of the players or tending to cause people involved in a particular kind of play to identify themselves as a group.

These six characteristics also seem to describe most games, whether they are card games, board games, party games, or video games. Though he does not explicitly refer to them as such, games might be what Huizinga called a "higher form" of play, described as "a contest *for* something or a representation *of* something."

In summary, games are a voluntary activity, obviously separate from real life, creating an imaginary world that may or may not have any relation to real life and that absorbs the player's full attention. Games are played out within a specific time and place, are played according to established rules, and create social groups out of their players.

WHERE'S THE FUN?

There are some people who will take exception to this definition because it contains no references to “fun.” However, “fun” is not an ingredient or something you put in. Fun is a result. In *A Theory of Fun*, Raph Koster defined fun as a side effect of learning something new, something that we “get.” The feeling of fun is essentially a positive feedback mechanism to get us to repeat the activity over and over.

A game *can* be fun, but only if the player enjoys playing the game. Since games are a voluntary activity, something the player chooses to do, there is an implication of enjoyment, either in anticipation or based on past experience. In the absence of anticipated enjoyment, or because of an unpleasant earlier experience, the player may choose to not participate or find something else to do. In other words, if a player does not find a game fun, he is unlikely to choose to play it again.

Whether serious games need to be fun, or should be fun, is an ongoing debate. In a survey of serious game developers, educators, and researchers conducted for this book, over 80 percent of respondents felt that the “element of fun” was Important or Very Important (see survey result 2.1).

Serious Games Survey Result 2.1

Question: How do you rate the importance of the “element of fun” in serious games?

33.33%	Very Important
47.62%	Important
15.87%	Useful, but not a primary goal
3.17%	Less Important
0.00%	Not Important

(Survey Note: 63 Respondents)

Serious games often violate one of the six characteristics listed above in that they aren't always voluntary activities. Trainees may indeed be ordered to play a particular game as part of their training. This doesn't mean that the serious game cannot be fun. This is one of the advantages game developers and designers have to offer serious games: the know-how to make something fun. This will be discussed later on in the chapter and in Chapter 3, "Serious Games Design and Development Issues."

Finally, what one person considers a fun simulation may be deadly serious to someone else. For example, the doctor trying to learn the best way to approach an upcoming surgery in a simulation isn't looking to have fun. He or she is trying to save a life by causing the least amount of damage to the affected tissue while still accomplishing the healing objective. In that case, fun must take a backseat to the accuracy of the simulation.

WHAT IS A SERIOUS GAME?

With a working definition of games, we can move on to the next question: What is a serious game?

Most games are presented to potential players as an entertaining, enjoyable, and *fun* way to pass the time or interact with other players. But what if the purpose of the game isn't one of these?

Abt described serious games as having an "explicit and carefully thought-out educational purpose":

Games may be played seriously or casually. We are concerned with serious games in the sense that these games have an explicit and carefully thought-out educational purpose and are not intended to be played primarily for amusement. This does not mean that serious games are not, or should not be, entertaining.

The simplest definition of serious games, then, is games that do not have entertainment, enjoyment, or fun as their primary purpose. That isn't to say that the games under the serious games umbrella *aren't* entertaining, enjoyable, or fun. It's just that there is another purpose, an ulterior motive in a very real sense.

**FIGURE 2.1**

America's Army

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America's Army (see Figure 2.1), developed by the United States Army as a recruiting tool, when played by a teenager or other civilian can still be an entertaining experience, a chance to “play soldier.” Yet the same game and its assets have been repurposed within the Army as a training and testing environment for mission rehearsal, intelligence skills training, first aid and survival training, and more. To an enlisted squad leader preparing for a mission, this game may be an important part of his training. In that instance, whether he finds the game entertaining is not of paramount importance to his superiors. One person's training simulation can be another person's game. For this reason, entertainment games reapplied to other purposes can also be considered serious games.

This tasking of entertainment media to other purposes is not limited to games. Many books throughout the centuries, and movies in the last century, have been written and produced that have similar “serious” messages or intents. John Steinbeck's 1942 novel, *The Moon is Down*, is an example of what could be called a “serious book.” Written as a propaganda book and how-to resistance pamphlet for small towns in occupied Europe, it is the

story of a small Norwegian town taken over by the Nazis. Despite this ulterior motive, *The Moon is Down* is still a powerful novel in its own right. C. S. Lewis's *Chronicles of Narnia* books are religious allegories, teaching Christian lessons through the fictitious adventures of children and magical creatures. And so on. Most books that have been banned throughout history were blacklisted because they expressed ideas deemed dangerous or seditious by society or the powers that be.

Likewise, in movies, documentaries are the most obvious "serious films." Even mainstream, popular cinema has films that would be considered serious, like *Saving Private Ryan*. *Saving Private Ryan* shows the horror of war at its most personal. In the opening scene, the most powerful in the film, you are there, in an amphibious landing craft, staring down enemy guns, watching people around you die suddenly and brutally, and just hoping you'll survive. Few other films have portrayed the plight of the foot soldier in war so dramatically. Beyond feature films, countless short films have been made, discussing everything from proper grooming habits to sexual harassment sensitivity as well as explaining the hows and whys of such topics as the metric system and customer service call handling.

Some people may argue that this kind of ulterior motive detracts from a game, artistically and in other ways, just as there are people who say such motives detract from books and movies. As an art form, though, all games, from the simplest match-three casual game to the most complex story-driven 3D surround-sound experience, single player or multi-player, have something to say. Art is expression. It's not always profound expression, but it is expression nonetheless.

Thus serious games are games that use the artistic medium of games to deliver a message, teach a lesson, or provide an experience.

Not all serious games cover material *seriously*, however. Ben Sawyer, co-founder of the Serious Games Initiative, has said that the "serious" in "serious games" is intended to reflect the purpose of the game, why it was created, and has no bearing on the content of the game itself.

MORE THAN “JUST EDUTAINMENT”

While the phrase “serious games” is relatively recent, and still new to many people, there is an older term that most will recognize: *edutainment*.

Edutainment, or *education through entertainment*, is a term that came into common use in the 1990s with the appearance of “multi-media” personal computers. Though edutainment is not limited to video games and refers to any form of education that also seeks to entertain, it most often refers to video games with overtly educational aims, specifically for preschoolers and new readers.

Serious games, however, as presented in this book, move past the limited focus of edutainment to encompass all types of education and at all ages. Edutainment titles are considered a subset of the overall topic of serious games.

WHY USE SERIOUS GAMES?

Huizinga saw play as the basis for all culture. Law, philosophy, art, and other aspects of human culture, he contends, arise “in the form of play” and even such serious human activities as war bear the “formal characteristics of play.” And, yes, even education. As children we learn to play, and as we grow up, we play to learn, even though sometimes the “play” doesn’t *feel* like “play.”

Is this really so surprising, though? The traditional schoolroom is centered around teaching the rules for multiplication, economics, history, and so on. Repetition is used to make sure the students remember. While “fun” is often lacking, as is voluntary attendance, the other similarities to play are evident:

- Pretend: school presents the universe in small pieces.
- Immersive: schools’ success in teaching requires the attention of the students.
- School happens at a definite time and place.
- School is based on rules.
- School is social, grouping students by age and learning ability.

In the same manner, all games, be they board games, social games, or video games, require the player or players to learn something. At a minimum, the rules of play must be learned. Once the basic rules are mastered, then comes refinement through trying different strategies and ways of applying the rules. Raph Koster gave this list of things that video games already teach:

- Motor skills: hand-eye coordination
- Spatial relationships: 3D and 2D
- Shapes: again, both 3D and 2D
- Curiosity: players learn to test everything, to seek out new information in unexpected places.

In *What Video Games Have to Teach Us About Learning and Literacy*, James Paul Gee wrote

Many good computer and video games . . . are long, complex, and difficult, especially for beginners. People are not always eager to do difficult things. Faced with the challenge of getting them to do so, two choices are often available. We can force them, which is the solution schools use. Or, a temptation when profit is at stake, we can dumb down the product. Neither option is open to the game industry, at least for the moment. They can't force people to play, and most avid players don't want their games dumbed down.

So how do designers get new, inexperienced players to learn how to play their games? Game designers, James Paul Gee said, “have hit on profoundly good methods of getting people to learn and to enjoy learning.” In summary, the game designer convinces the player to learn how to play the game by making it fun.

Abt agreed. “Games,” he said in his book, “are effective teaching and training devices for students of all ages and in many situations because they are highly motivating, and because they communicate very efficiently the concepts and facts of many subjects.” Games give “dramatic representations” of the subject or problem being studied, and allow the players to “assume

realistic roles, face problems, formulate strategies, make decisions, and get fast feedback on the consequences of their actions”—all without the cost of real world consequences or errors.

This is the main point of serious games: to get players to learn something, and, if possible, have fun doing it. The new generation of students and trainees has grown up with video games. It's what they're used to. They're more likely to play video games and learn from video games.

Research showing the effectiveness of serious games is beginning to accumulate. A *Wired* article from September 2004 quoted studies showing “that immersion in simulated environments increases learning speed and retention for a range of tasks, from making laparoscopic incisions to rescuing people from burning buildings.” A *CBS Evening News* segment in February of 2005 talked about how a video game would keep the player engaged for 2 to 4 hours, while students in a classroom typically lost interest after 15 minutes. Thus serious games could become an important tool in any classroom situation.

WHAT CAN SERIOUS GAMES TEACH?

As we discussed before, all games are a form of expression. Since games express ideas, information, and beliefs, this means that games teach.

Considering the teaching potential of games, what subjects and material are serious games suitable for? Who would be interested in games that teach? The military has used game-like simulations in their training for years. They are not the only ones interested in serious games, however. There are also

- Educators (primary, secondary, and higher)
- Corporations
- Non-government organizations (NGOs)
- Artists

In short, this list includes anyone who has something to teach, a skill to pass on, or a message to preach.

After using computer simulations for military purposes, Abt realized that the types of simulations used by the military could be used elsewhere. “Political and social situations,” he said in *Serious Games*, “can often be viewed as games. Every election is a game. And almost all business activity is a game. Whether these contests of politics, war, economics, and interpersonal relations are played with resources of power, skill, knowledge, or luck, they always have the common characteristics of reciprocal decisions among independent actors with at least partly conflicting objectives.”

As we cover the various markets for serious games in Part 2 of this book, we will provide examples of what has been done in those markets and what people in those markets are looking to achieve in the future.

CONCLUSION

When considering the educational value of books and movies, it has been observed that those books and movies that attempt to preach less have the greater effect. That is, the intended moral or meaning of a story is often ignored when blatantly stated. The effect is much greater when the message is instead woven into the characters, setting, and plots in an almost incidental, matter-of-fact manner.

Serious games offer a new mechanism for teaching and training by combining video games with education. Serious games can extend the value of training films and books by allowing the player to not only learn, but also to demonstrate and apply what he or she has learned.

Normally, game designers are not educators and educators are not game designers. The results of one group attempting to operate on their own within the domain of the other are seldom exemplary (though exceptions exist). However, by combining the skills of game designers with those of educators, serious games can be a force in teaching students of all ages.

Now that we’ve covered the basics of what serious games are, in the next chapter we will talk about design and development considerations game developers might face while working on serious games.