

Video Games and the Pedagogy of Place

DAVID HUTCHISON

ABSTRACT. In this article the author explores the construction of place within virtual worlds and, in particular, in video games that appeal widely to children and youths. With the notable exception of “edutainment” titles, gaming and education have traditionally been viewed as separate pursuits. Yet, after school, millions of children and teens spend inordinate amounts of time immersed in virtual worlds that invite exploration and reward. Although they are ignored or, worse yet, dismissed by many adults, video game environments are valued place contexts for millions of young people. The author explores the elements of design that make virtual worlds so attractive to gamers and suggests strategies for incorporating video games into educational programs in a pedagogically sound way.

Key words: place, video games, virtual worlds

Despite their varied content, all video games have this in com-

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mon: they aim to entice children, adolescents, and adults to play them. Some games are aimed only at young children and have little appeal to adults. Others, with their gratuitous violence or sexual themes, are clearly marketed to a mature audience and sport a *Mature* or *Adults Only* Entertainment Software Ratings Board (ESRB) label that reflects their adult content.

In the United States, the commercial video games industry is a \$9-billion-per-year business (NPD Group 2005) and, although the average purchaser of video games is in his late twenties, most video game players are in their middle to late teens or in early adulthood, and they include both men and women. Video games are gradually supplanting other forms of entertainment, most notably television programs, as the preferred form of leisure and recreation for young people. The video game industry now rivals Hollywood as an economic and cultural *tour de force* in the United States.

Video games have traditionally been grouped into the following broad categories (Rollings and Adams 2003). Action games are typified by the popular first- and third-person shooter genres, which come in two varieties: fast-paced run-and-gun shooters (e.g., *Halo*)

and slower-paced tactical games (e.g., *SWAT*). Strategy games (e.g., *Civilization*) also come in two varieties: turn-based and real-time. In both varieties, players are given a grand-scale (usually top-down) view of a world in which they manage people, armies, armaments, and other resources. Role-playing games (e.g., *World of Warcraft*) immerse gamers in a persistent, living, virtual world in which they live, work, fight, or play over time. Role-playing games are most often played with other gamers online, but some are single-player.

Puzzle games (e.g., *Tetris*) challenge players to solve puzzles using a rules-based system. Fighting games pit players against boxing or martial arts opponents. Sports games (e.g., *Madden NFL*) aim for authenticity in simulating the on- and off-field action of football, baseball, hockey, and other sports. Driving games (e.g., *Grand Turismo*) simulate the experience of being behind the wheel in a fast-paced street, rally, or track race. Flight and other vehicle-simulator games (e.g., *Flight Simulator*) aim for authenticity in simulating the experience of travel. Adventure games (e.g., *Grand Theft Auto*) play out an interactive story in which the gamer takes on the role of the lead character.

Educational games fall into the serious games category, as do virtual simulators that are used to train military and emergency service personnel.

Most video games feature both a single-player story line and a variety of multiplayer modes that allow two or more people to play competitively against one another or cooperatively with each other. The recent rise of mas-

world of schools and classrooms, but also in the virtual world of children's imaginations, online life, and video games. I originally advanced this argument in my book, *A Natural History of Place in Education* (2004), which looks, in part, at the transition from real-world to online learning and the implications for the deschooling of society that this might have. Online technolo-

examples of the often hostile environments players must traverse to advance in their games.

The exterior land forms of most video games are derived from grayscale height maps, which are similar to some topographic map formats, that determine the various elevation points of the terrain. Points that fall below sea level are water bodies. Those that rise above sea level are hills and mountains. Trees, rocks, buildings, and other natural and human-made elements are then positioned in the video game world using an x/y/z coordinate system.

Many landforms pose unique challenges to gamers. Characters may move slowly or tire easily when climbing a hill. They may lose their footing and fall as they descend a mountain. Turning a sharp corner in a drag race on a wet day can be particularly challenging. Taking account of the terrain in a tactical military shooter is especially critical. Snipers need to search for high elevation points that provide cover or concealment in the brush. Squad leaders need to take full account of the terrain before choosing the safest pathway to the next target.

Landforms serve another function in video games: they often act as natural barriers that prevent players from venturing outside the boundaries of video game worlds. Mountains, cliffs, and large water bodies are common choices in this regard. Their use makes for a more authentic in-game experience than did the invisible walls that marked boundaries in older games.

Maps

Most video games, particularly shooting and driving games, incorporate some form of a map into the heads-up display (HUD) that overlays the in-game action. A HUD provides key information (e.g., ammunition count and injury status) that is often critical for gamers as they make split-second decisions.

Maps are often placed in the corner of a video game's display. Sometimes they appear instead as translucent overlays that cover the entire screen. In either

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sively multiplayer games (e.g., *Second Life*) has turned some video games into persistent virtual worlds that exist, change, and grow, even when gamers turn off their computers. Many of these virtual worlds boast their own monetary systems, economies, commercial businesses, real estate ventures, and laws that govern the game-play experience.

No single genre of video games currently dominates the market. Instead, gamers have a wide variety of titles from which to choose and, indeed, a variety of choices of platforms on which to play. Both the type of game and choice of platform (i.e., personal computer, console, or handheld) frame the place experience of playing video games. Each platform offers different advantages in terms of graphic quality, screen size, portability, input controls, ease of use, and library of titles. The real-world place experience of playing video games can be at a computer desk, on the couch in front of a television, or on a bus, killing time on the way to work or school. Yet, regardless of the real-world place context of the gamer, the virtual world inside the video game envelops and entrances players for hours at a time.

The Phenomenology of Place

In this article, I argue that places in education exist not only in the real

gies such as virtual encyclopedias, chat rooms, and virtual museums have the potential to change the face of place in education, but, in many ways, the personal computer, console, and online video games are leading the way, if only because of the tremendous competition in the video game industry and the immense push by publishers, game developers, and gamers to move hardware and software innovation forward as quickly as possible. It may be a controversial opinion, but I believe we can catch a glimpse of what the constructed place worlds of tomorrow might look like by examining the video game worlds of today.

What do gamers discover in terms of *place* in the video games they play? It is nothing short of a virtual wonder-world of sensory stimuli, navigable worlds, hidden treasures, and geographic and architectural delights. Thus, the place worlds of video games should be of particular pedagogical interest to social studies and geography teachers.

Landforms

Video game environments would be dull places without the wide variety of land forms and terrains that players routinely encounter on their journeys. Vast open spaces, towering mountains, steep drop-offs, and flowing rivers of lava are

scenario, maps allow players to locate themselves in the video game world. They provide a measure of feedback on what direction players are heading and what obstacles they might encounter next. The backdrop of a map may comprise a thumbnail view of the surrounding terrain (e.g., hills, roads, and buildings) or a three-dimensional representation of a building interior. Blips denoting enemies, allies, objectives, power ups, and other items of interest are updated in real time.

Learning to navigate a map can require a fair amount of study. Properly interpreting the scale of the map, discovering what the symbols mean, and understanding the directional and compass bearings require skill. Add to this the sheer intensity and fast pace of the game-play and it is clear that players need to be quick on their toes as they steal a look at the in-game map every few seconds.

Physical Laws

Despite the pervasive stereotype, not all recently released video games are inspired by military combat or gang violence. A significant amount of game-play also occurs in fantasy worlds that take full advantage of a video game's ability to confound the physical laws of the universe. As I wrote in *A Natural History of Place in Education*:

Places in the physical world by necessity conform to the physical laws of nature. Columns and beams counter the force of gravity. Enclosed spaces protect us from the elements. Buildings are oriented to let in or keep out sunlight at particular times of the day. Walls mark off the boundaries of rooms. . . . Yet in [the world of video games], gravity is a nonissue. There is no cold or rain from which to protect ourselves. Virtual sunlight can be pointed anywhere. . . . Walls can be semi-permeable and [players] can be transported instantly from one level of a cyber structure to another. Moreover, virtual spaces can appear and disappear, morph into new spaces, [and] fold into each other. (2004, 119–20)

One excellent example that fits this description is *Psychonauts*, an adventure game that was released to stellar reviews in 2005 (e.g., Price 2005). Raz,

the protagonist of the game, is a young child at a summer camp for psychic studies. During the game, Raz physically enters the minds of his fellow characters, through which he travels using the powers of levitation, telekinesis, and clairvoyance, plus the more traditional running, jumping, and swinging skills. *Psychonauts* boasts some of the most eye-catching fantasy environments to be found in a video game and, through the unnatural powers of its protagonist, it takes full advantage of a video game's ability to confound physical reality (see figure 1).

Historical Settings

Contemporary and fantasy environments are popular settings for video games, but many developers instead aim for historical authenticity. The Middle Ages, World War II, and the Vietnam War are popular settings.

When designing a period game, developers need to pay much attention to the accuracy of the game's topography, vegetation, built environments, weapons (if any), and other elements. Gearbox Software, the developers of the critically acclaimed World War II title *Brothers in Arms: Road to Hill 30* (2005), combed the U.S. National Archives in search of photographs, maps, and first-person accounts of the French countryside, villages, and farmsteads they planned to model (Ocampo 2004). The terrain of the actual villages

was also surveyed in person by a team of designers.

The choice of a historical setting often affects game-play. One key to a successful Vietnam war game is the ability of characters to crawl through tall grass and use jungle terrain as natural cover when approaching enemies. In *Brothers in Arms*, the stone walls of buildings provide much sturdier cover than the flimsy wooden fences that were also found in the French villages of the period.

The Quality of Place

One aspect of the video game industry that I find fascinating is the print and online reviews that most video games undergo (or sometimes endure) soon after release. Many reviews are critical analyses of what are essentially constructed place worlds with their own rules, physical laws, social conventions, and character identities. Also embedded in many reviews are obvious place analyses that, at times, rival the scholarly place analyses of academic journals and books.

Instead of "designing spaces," place-conscious game developers are in the habit of "creating places." They create places that are culturally meaningful and that resonate emotionally with players. It is not enough for game developers to create a compelling world space. The game-play that occurs in that world also needs to be compelling, as do the

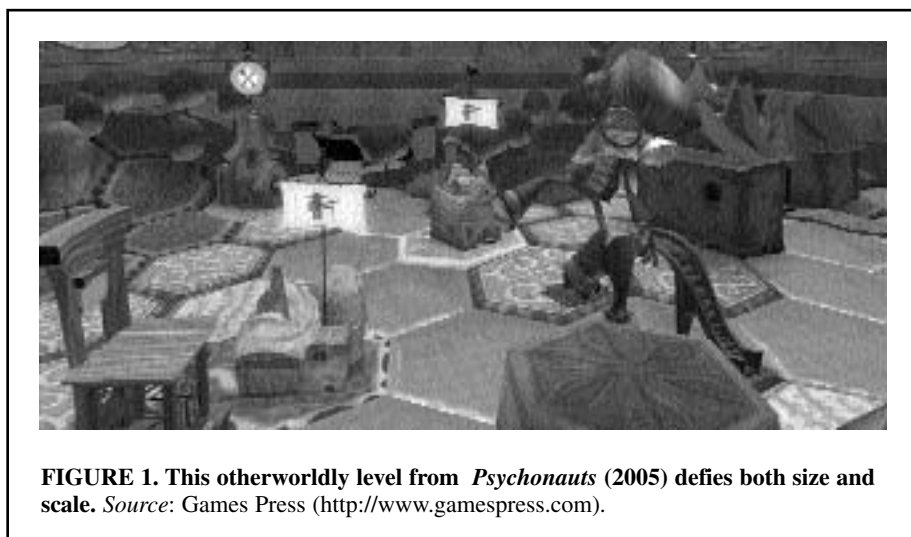


FIGURE 1. This otherworldly level from *Psychonauts* (2005) defies both size and scale. Source: Games Press (<http://www.gamespress.com>).

players' feelings of embeddedness in the surrounding world through the main character.

Some video games are praised for the synergies they achieve in weaving a tight connection between the characters and their world. *Splinter Cell: Chaos Theory* (2005), for example, received the highest score ever awarded by the *Official Xbox Magazine* (McCaffrey 2005) for the game's high-quality interplay between character, world, and game-play (for both single and multi-player modes). From a third-person perspective, players of *Splinter Cell: Chaos Theory* lead an infiltration specialist through a variety of securely guarded locales, including a lighthouse, cargo ship, and bank. The game-play is slowly paced and tactical, with moments of intense action breaking up longer periods of stealth maneuvers.

For this third installment of the *Splinter Cell* series, the developers designed game levels that have multiple pathways, a save-anywhere system, and open game-play that invites replay as gamers test a wide variety of tactics. Sam Fisher, the lead character, can conform to his environment by hugging walls and peering around corners without being seen (see figure 2). In this and many others ways, the place worlds of *Splinter Cell: Chaos Theory* are not simply inhabited by the player, but are also consciously taken into consideration as gamers make tactical game-play decisions about what to do next.

The character–world–game-play synergy achieved by *Splinter Cell: Chaos Theory* is not matched by all or even most video games. For example, riding a recent trend of realistic military combat simulations that have the tacit or overt support of the U.S. armed forces, *Close Combat: First to Fight* (2005) is a first-person tactical squad-based shooter that was criticized in many reviews for the poor artificial intelligence of its computer-controlled characters, both allies and foes. Yet, there is much to learn about the construction of virtual places, even from video games that are less than successful. Consider the embedded place analyses in these two review excerpts of *Close Combat: First to Fight*.



FIGURE 2. Lighting, wall hugging, and stealth maneuvers are all part of the world of *Splinter Cell: Chaos Theory* (2005). Source: Games Press (<http://www.gamespress.com>).

Half the time, [the game-play] functions properly and it's very cool to watch as your Marines hug cover and carefully reposition themselves based on your movements. The other half of the time, however . . . will have your fire team aiming their guns point-blank at walls. . . . Forget about sneaking around, as shadows and noise play no discernible role in how the enemy detects your presence. Instead, combat awareness is premised on a straight unblocked line between you and the enemy. (Peckham 2005, 58)

The engine looks pretty good most of the time, but then shadows bleed through a wall or someone's gun pokes noticeably through a door. It's obviously an Xbox port, with its small levels and too-tight field of view. The level design is extremely linear and unimaginative. At one point, you begin a mission near a mosque . . . but all you get is a map with a golden dome and a minaret. . . . That's the extent of the level design. On several occasions, the game seems to run out of steam, so it plunges you into a sewer level. (Chick 2005, 76)

The Pedagogy of Place

Having made a case for valuing video games as constructed place worlds wor-

thy of study in educational settings, I would like to close this article by suggesting pathways for integrating video games into the classroom. These ideas come from my forthcoming book about video games in education (Hutchison forthcoming).

Even if schools could afford it, by no means do I envision classrooms equipped with a Playstation 3 or Xbox 360 console at every student's desk (even though this idea is similar, in many ways, to the original vision for integrating computers into the classroom in the early 1980s). Rather, I propose classroom-based activities that take place in the real world, but that ask students to focus on the place worlds of video games. The three teaching ideas I present below, in order of increasing complexity, are by no means an exhaustive list.

Descriptive Writing

Teachers can encourage their students to write descriptive paragraphs about the video games they play at home. Descriptive writing is already a staple of

many elementary classrooms, and this exercise is particularly applicable to the rich place worlds of video games. By focusing on place and by learning new words to describe the often unique settings of video games, students can enrich their vocabulary as they turn the unexpressed game-play knowledge they possess into words.

Teachers can ask their students to study a favorite video game level at home or to visualize it in their minds at school, perhaps through a guided fantasy journey, and then to write a descriptive paragraph about a particular location in that level. Alternatively, the students can be asked to trace—through words, not images—the pathway through a game level, from beginning to end, using the ordinal directions they have studied in class. Mapmaking can also be tied to descriptive writing as students use the cartographic skills they have learned in geography class to design a paper-and-pencil map of a favorite video game level.

Place Analysis

Describing a video game world is good writing practice, but most place-based educators also want their students to think critically about the places they often take for granted in their environments. Home, school, the local community, and children's favorite places (Sobel 1998) are popular settings in this regard, but video game worlds are also ripe for analysis.

Place analyses of video games can be conducted from a personal perspective as students critique the level designs embedded in the video games they enjoy or dislike. However, there is also a growing body of game-design literature to draw from (e.g., Feil and Scattergood 2005). Many instructional books contain advice on designing game levels that are aesthetically pleasing, innovative, stimulating, and challenging (but not too challenging).

Once written, place analyses of video games can be posted on a school's Web site for other gamers to read. A class of students can take the next step and create a regularly updated review site that

features place analyses of a variety of video game titles.

Game Development

Critiquing a video game world requires some imagination, but designing a new video game environment from scratch requires more. There are many tools available to assist students in creating both new games and modifications to existing games.

Level editors for many popular personal computer games are available for free online, and some level editors are included with the games. Most developers encourage game enthusiasts to create modifications to their games. Such modifications extend the life of a video game and help sustain an active player community.

In increasing order of complexity, students can create new levels, three-dimensional models (e.g., buildings) for existing levels, and entirely new worlds for existing video games. They can share these modifications with other gamers online.

Students can also create games from scratch. Popular commercial and open-source tools, such as *3D GameStudio*, *Blender*, and *DarkBasic*, have an active user base and are fairly approachable in terms of their three-dimensional modeling and programming requirements. Whether a group of students chooses to modify an existing game or to develop a new one, there are numerous entry points for integrating the study of place into their project work.

Conclusion

These activity ideas are just the beginning when it comes to studying virtual places in the classroom, but there is an important caveat to this article that also deserves mentioning: the notable downsides of video games. They can be highly addictive (Leigh 2005); they can lead children to play outside less; they are sometimes associated with repetitive stress injuries and other ergonomic problems (Wlazelek 2005); and possibly, although the research is inconclusive (Fahmy 2005; Lachlan, Smith, and

Tamborini 2003), they can increase violent tendencies in gamers. Each of these problems is worthy of concern, but the solution is not to ban video games outright (a near impossible goal given their proliferation), but, rather, to teach students to play them in moderation, and, just as important, to encourage students to interact with video games as writers, critics, and game developers, not only as players.

When it comes to exploring popular video games in the classroom, teachers have a choice. They can be hostile to the idea and ignore its potential, as they generally do now, or they can embrace the pedagogical benefits of exploring video games as a launching-off point for quality learning experiences in the classroom. If educators want to privilege the study of place in schools, what better starting point is there than the place experiences so many students already value in their lives outside of school? Video games should by no means be the end point for the study of place in school, but they can be the beginning.

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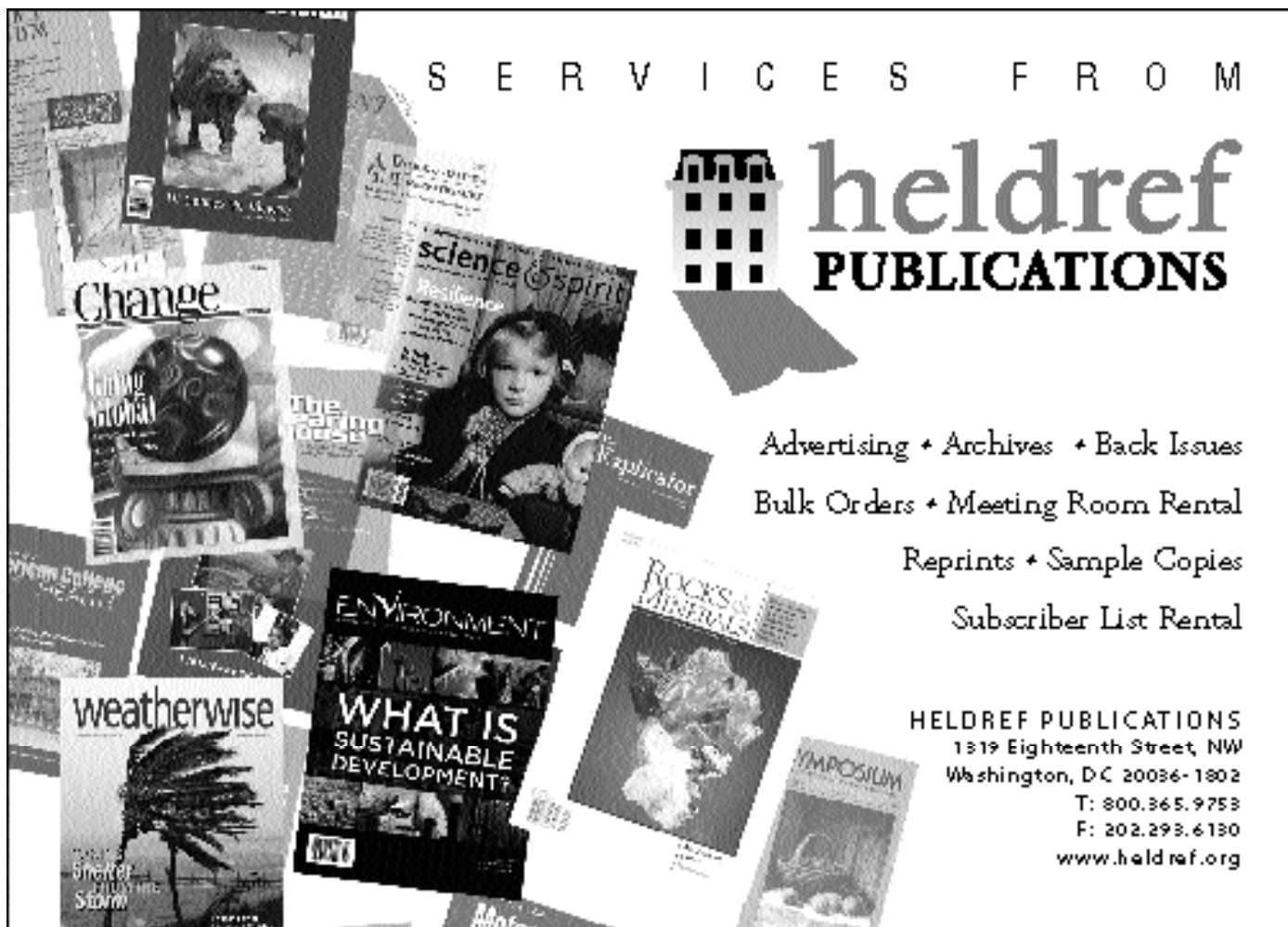
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