

# Sustainable Worlds, Sustainable Words: Using Digital Games to Develop Environmental Awareness in Writing Classrooms

**Jennifer England,**  
*Hamline University*

---

---

*This article provides a framework for using digital game spaces in college writing classrooms to help students develop environmental awareness. Drawing on a range of relevant theories, the author argues that digital game play offers simulated experiential learning opportunities that allow students to locate virtual representations of the environment that potentially mirror, critique, or even promote new ideas regarding material-world environmental concerns. By mapping critical, rhetorical, and ethical literacies onto digital gaming practices, this article advances a creative pedagogical approach to engagement with environmental rhetorics, narratives, and ideologies. Through an extended example of the popular mobile app The Sims Freeplay, the author brings together the disciplines of rhetoric and composition, environmental studies, and game studies in a productive conversation about the ways gaming can increase students' rhetorical and ethical engagement with both writing and the environment.*

---

---

Sitting in a college classroom, students are presented with a hypothetical situation: in a garden plot, do they plant tomato seeds that are known to be safe but take a long

time to grow and harvest, or do they plant genetically modified seeds that may cause unknown effects but grow quickly and yield a larger harvest? Interestingly, these students are not in an environmental studies course. Rather, they are in a writing course, and they are immersed in a virtual world by playing the free mobile app *The Sims Freeplay*. And this is an important place and space to face such a situation.

Students in college-level writing courses are tasked with the challenge of developing the critical thinking, rhetorical reading, and professional writing skills that will make them not only effective communicators but also socially-aware, ethically-minded, and productive citizens. They must hone their communicative skills in order to become rhetorically savvy and technologically innovative thinkers and writers who are capable of engaging in discussions about important local and global concerns. And they must use those communicative skills— whether written, oral, or technological— to advocate for solutions to important political and social problems that affect not only themselves but also future generations.

These skills position students to become environmental advocates. Advocacy, however, cannot be effective without environmental awareness. According to the United Nations Environment Programme,

awareness of the environment means the ability to emotionally understand the surrounding world, including the laws of the natural environment, sensitivity to all the changes occurring in the environment, understanding of cause-and-effect relationships between the quality of the environment and human behaviour, an understanding of how the environment works as a system, and a sense of responsibility for the common heritage of the Earth, such as natural resources— with the aim of preserving them for future generations. (par. 2)

Although digital game spaces may seem unlikely sources for the type of emotional connections to the world, rhetorical thinking, and environmental conversations required of a honed environmental awareness, I argue that game play is a creative way to help students

better understand, relate to, and communicate about our material environment. As writing instructors continue to accept many digital spaces (online learning systems, blogs, social media, etc.) as fruitful sites for studying rhetoric, practicing writing, and encouraging problem solving, we also must look to game spaces as opportunities for students to develop critical thinking and rhetorical and reflective writing about the pressing environmental issues we face today and will face in the future. Because digital games provide opportunities for experiential learning through simulations, they allow students to consider and respond to environmental problems and scenarios in virtual worlds in ways that can transfer to other situations. Specifically, I argue that encouraging students' digital gaming practices in the writing classroom can increase their environmental awareness by helping them to develop multiliteracies in three key areas: critical, rhetorical, and ethical.

## **VIRTUAL/DIGITAL + MATERIAL/PHYSICAL = ONE WORLD**

At the onset, the irony of arguing that increased environmental awareness can take place in a virtual world should be addressed, as skeptical readers may point out that, in returning to the opening scenario, students are now twice removed from the “real”/physical/material environment: first inside the walls of a classroom and then inside a virtual game world. My argument here, however, does not contest the vast benefits of being outdoors within nature. Rather, the argument pulls on the tenuous line that divides the material and virtual worlds. Suggesting that when playing a digital game— in which a player is immersed in a virtual world— the player is somehow removed from the material world is akin to suggesting that when reading a book— in which the reader is “lost” in the story— the reader is no longer physically present, holding a book in her hands, grounded in the couch, bus, or grass where she sits. That is to say, we are always-already part of multiple worlds.

Furthermore, the worlds in which many college students spend time and energy are virtual. More than a decade ago, Steve Jones' Pew Internet & American Life Project “Let the Games Begin: Gaming Technology and Entertainment among College Students” stated “seventy percent (70%) of college students reported playing video, computer or online games at least once in a while. Some 65% of

college students reported being regular or occasional game players” (2). Nearly a decade later, “the 2011 National Survey of Student Engagement, completed by 27,000 first-year students, [found] over one-third of incoming males and nearly one-fourth of females reported playing computer games more than 16 hours per week” (qtd. in Inside Higher Ed). If that is not enough reason to believe in the prolific reach of gaming, the Entertainment Software Association’s (ESA) annual “Essential Facts about the Computer and Video Game Industry” reports “155 million Americans play[ed] video games” in 2015, with 42 percent playing games three or more hours per week (2). According to the ESA’s latest report, in 2016 that number is now 63 percent (2). Furthermore, the ESA’s latest report states, “of the most frequent gamers 75 percent believe playing video games provides mental stimulation or education” (6). Although some may see these numbers as frightening (think of all the time not being spent outdoors!), game designer Jane McGonigal believes we should be gaming even more. In her Ted Talk, “Gaming Can Make a Better World,” she states:

Right now we spend three billion hours a week playing online games ... [but] three billion hours a week is not nearly enough game play to solve the world’s most urgent problems ... If we want to solve problems like hunger, poverty, *climate change*, global conflict, obesity, I believe that we need to aspire to play games online for at least 21 billion hours a week, by the end of the next decade. (emphasis added)

In other words, gaming can and does make an important impact in society, and large numbers of people— many of them college students— already spend time moving freely between virtual and material worlds. What these statistics challenge is the very notion of a clear division between virtual world and material world. Geoff Mulgan, Chief Executive of the National Endowment for Science, Technology, and the Arts, argues that “as the Internet of things advances, the very notion of a clear dividing line between reality and virtual reality becomes blurred, sometimes in creative ways” (par. 5). One of those creative ways is digital games, and by setting the virtual versus material world argument (and irony) aside, we can begin to

see digital games as a continuation of the kinds of thinking, working, and interacting students do every day.

If writing instructors use the classroom as a place to leverage students' gaming experiences, we can challenge and encourage students to use game play to become more environmentally aware thinkers and communicators. Game studies research shows that digital games can make important positive cognitive and social impacts in a variety of ways, including how players think about the environment. Communication scholars Shawna Kelly and Bonnie Nardi's research found games can produce "scenarios that simulate and model sustainable practices ... [through] the ways their game mechanics and game scenarios represent social, economic and environmental interdependencies," and so games "can cultivate imaginative visions of situational potentials and solutions to problems" (par. 1). This suggests that through game play, student-players can locate representations of the environment that potentially mirror, critique, challenge, or promote new ideas regarding sustainable practices and other environmental concerns, effectively moving environmental conversations within and between virtual world and material world. Therefore, virtual worlds in digital games not only circulate representations of the environment, but they also can influence our understanding of, relationship to, and communication about our physical environment through the ways in which game designers embed and players contextualize games' rhetorical devices. What writing instructors must do is help students tease out the complexities of gaming and use digital game spaces as opportunities for students to engage in experiential learning through simulations.

## **EXPERIENTIAL LEARNING, SIMULATIONS, AND THE ENVIRONMENT**

Experiential learning is "a process through which students develop knowledge, skills, and values from direct experiences outside a traditional academic setting" (University of Colorado-Denver par. 1) and then "apply what they learned in the experience (and what they learned from past experiences and practice) to a similar or different situation ... [and] discuss how issues raised can be useful in future situations and how more effective behaviors can develop from what they learned" (Northern Illinois University 3). While

many institutions such as the University of Colorado-Denver equate experiential learning to internships, service learning, and similar activities, I argue that other creative experiences— such as digital gaming— offer opportunities for experiential learning as well. Digital games do this specifically through simulations based in the use of a surrogate (or avatar). Game studies and literacy scholar James Paul Gee explains the terms surrogate and simulation as follows:

The player has a surrogate [or avatar] in the simulation (or game), namely the virtual character or characters he or she controls in the virtual world ... Through this character or characters the player ... discovers or forms goals within the simulation, goals that the player attributes to his or her surrogate in the world. In order to reach these goals, the player must recognize problems and ... must discover what is possible and impossible (and in what ways) within the simulation in order to solve problems and carry out goals. (“Why Are Video Games” 2)

Gee argues that this experience actually gets at the core of the human mind and how it processes information. Drawing on research in cognitive science, he asserts:

Humans think and understand best when they can imagine (or simulate) an experience in such a way that the simulation prepares them ... [not only] to understand and make sense of things, but also to help [them] prepare for action in the world ... [so] the mind is a simulator, but one that builds simulations to prepare purposely for specific actions and to achieve specific goals ... [and] video games turn out to be the perfect metaphor for what this view of the mind amounts to. (“Why Are Video Games” 8-9)

Research from several disciplines (for example, see Hertel and Millis; Lean, et al.; and Young) seconds Gee’s claims and discusses the specific value of digital simulations, like gaming, in higher education. David Damassa and Toby Sitko, for example, argue “simulation technologies are powerful educational tools that are becoming more widely used due to their effectiveness in providing powerful learning experiences” and in the assessment of “student performance—

for communication skills, critical thinking, and application of knowledge” (5). Later, I offer specific examples of incorporating digital games as “powerful learning experiences,” but here I want to note that the elements of student performance stemming from these experiences— communication, critical thinking, application—are highly important in writing classrooms. Furthermore, the major tenets of environmental awareness involve these same elements: the ability to think critically about the environment, to develop an emotional and ethical responsibility to the Earth, and to effectively communicate and act in order to preserve it. Gaming, therefore, can help students simulate environmental problems and concerns, as well as practice responding to them in environmentally responsible ways. The United Nations Environment Programme argues that an “environmentally-aware individual should be conscious about the needs and demands posed by different sectors of society and the government so that he/she can make a better judgment before and during his/her participation in a given programme or activity” (par. 10). Gaming provides a space for making different judgments and trying out choices prior to enacting them in the world.

## THE SIMS FREEPLAY: AN EXAMPLE OF SIMULATED EXPERIENTIAL LEARNING

To contextualize how experiential learning through the simulation of gaming— or, what I call simulated experiential learning— can help students increase their environmental awareness, a return to the opening hypothetical situation will be useful. Playing *The Sims Freeplay* is a prime example of how students can develop the critical, rhetorical, and ethical literacies necessary to be environmentally conscious and active citizens.

*The Sims Freeplay* is a utopian roleplaying mobile app that is part of the large *Sims* series franchise, which is playable on computers and console systems in addition to mobile devices. Since its release in 2000, the franchise has continually produced top-selling PC games in North America, garnering well over \$50 million in sales (Egenfeldt-Nielsen, Smith, and Tosca 15). As its name suggests, *The Sims Freeplay* is a free version of the *Sims*. The goal of *The Sims Freeplay* is for a player to create surrogates (avatars called Sims) who will



first develop a Sim town through building homes, stores, and other facilities and then will make the town and its inhabitants prosperous, both through Sim-to-Sim interactions and by working in order to make money (Simoleons) for purchasing a variety of necessities and desirable items. Essentially, Sims are simulations of regular, everyday people who lead regular, everyday lives. The job of the player and surrogate/avatar is to take care of the Sims' basic needs and indulge them in their wants so the Sims remain healthy and happy. While there are many aspects of the game that can help students develop multiliteracies and environmental awareness (for example, cleaning up a campground, interacting with wildlife, and talking to trees), I will focus on one specific aspect: gardening.

Aside from going to work, gardening is one of the main ways Sims earn Simoleons. Sims can purchase garden plots for a nominal fee of 20 Simoleons; then, they can purchase a variety of seeds to grow vegetables (Figure 1). Sims may choose to plant regular seeds that grow into vegetables earning Sims a set amount of Simoleons, or they may plant genetically modified (GMO) seeds that *potentially* grow into vegetables earning the Sims more money than the regular seeds (Figure 2).



Figure 1. A garden plot in The Sims Freeplay.

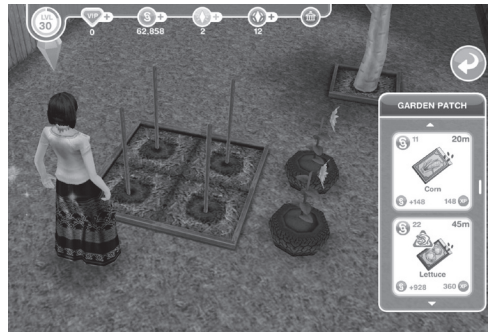


Figure 2. Types of seeds available in The Sims Freeplay.

The game, however, adds an unusual twist to gardening: If Sims choose to plant GMO seeds, they run the risk of literally being attacked by a “Sim-Eating Plant” (what looks like a mutant Venus



flytrap) that grows from those seeds (Figure 3). In a test-your-luck scenario, the game mechanics “randomly” decide one of two outcomes: either the GMO seeds grow normally and nothing happens to the Sims, or the GMO seeds grow into a “Sim-Eating Plant.” When facing the latter outcome, the Sims must “negotiate” with the plant—essentially battling it in a fight during which the Sims are eaten and then regurgitated by the plant (Figure 4). And if that was not bad enough, these mutated GMO seeds yield no monetary gain for the Sims (and also waste several real-time minutes of the Sims’/player’s time).



Figure 3. A Sim-Eating Plant in The Sims Freeplay.



Figure 4. Negotiating with a plant in The Sims Freeplay.

So how do the students in a writing classroom first make sense of the environmental rhetorical devices embedded in and played through the *The Sims Freeplay* and then respond to this gardening scenario and the choices it presents? One way students can respond is by honing specific literacies that allow them to identify the context of this environmental situation and then test out different scenarios before ultimately determining how to respond appropriately.

## MULTILITERACIES AND ENVIRONMENTAL AWARENESS

I argue that digital game play helps students approach critical thinking and rhetorical and reflective writing about the environment from what Kelli Cargile Cook refers to as a “layered literacies framework” (8). This framework encompasses six key literacies students should

possess: basic, rhetorical, social, technological, ethical, and critical. As she claims, “possessing a variety of literacies that encompass the multiple ways people use language in producing information, solving problems, and critiquing practice” (5-6) is significant in helping students mature as successful communicators and citizens. Drawing on Cook’s notion of layered literacies and the gardening scenario from *The Sims Freeplay*, I map critical, rhetorical, and ethical literacies onto the ways in which students can develop environmental awareness through digital gaming practices. With each literacy, I offer example assignments that would guide students to engage in both writing development and environmental awareness.

### *Critical Literacy*

According to Cook, critical literacy allows students to “recognize and consider ideological stances and power structures and [develop] the willingness to take action to assist those in need” (16-17). Students can work toward developing this literacy by identifying the environmental narratives and ideologies embedded in the game’s gardening scenario. For example, in allowing gardening to be a main source of income for Sims, the game presents the environment as a commodity. This commodification suggests that an anthropocentric—or human-centered—environmental ideology is at play (pun intended). Because environmental ideologies exist on a spectrum ranging from anthropocentric to ecocentric (which supports a *heterarchy* among plants, wildlife, and humans), students can discuss and then pinpoint an even more specific ideology the game presents. In this case, they may identify an “unrestrained instrumentalist” ideology. According to Julia Corbett, unrestrained instrumentalism is believing and acting as if “the natural world and all its resources exist solely for human use, use that need not be restrained or limited in any way” (28). Adhering to this ideology calls for “treat[ing] and us[ing] resources with only immediate human desires and wants in mind” (28). Armed with this knowledge, students then can address questions such as: What is at stake and who are the stakeholders in this ideology? Who and what is most affected by the impact(s) of this ideology? How can we respond to or counter this ideology in productive ways?

While these questions arise from a scenario that is fictional, game play allows students to consider their responses in light of current environmental problems and crises. As Kevin Moberly suggests, games can help students “recognize the master discourse of consumerism ... [and] empower them to work towards models of ... more substantial, meaningful forms of discourse” (298). Furthermore, game play provides students with an opportunity to approach environmental problems and crises from a reflective and personal perspective. Moberly describes this as student-players’

ability to compose themselves in relationship to ... highly symbolic environments— to write and ultimately revise their actions in relationship to the reality that is manufactured on the screen. This activity is often constructed as play rather than writing or composition ... [but] its focus is ultimately on how players read and write (compose) themselves in relationship to the game. (291)

When creating assignments for students, writing instructors should highlight the important relationships between game play, environment, and composition. A good example is a game play autoethnography. In this assignment, students must “think aloud” their game play and then reflect on it, specifically on their choices and actions toward the virtual-world environment; how and why they made those choices and actions; and finally, what these experiences reveal— or conceal— about their understanding of and relationship to both the virtual-world and the material-world environment. Students can create their autoethnography similarly to a video game walkthrough (found commonly on YouTube) but with the added critical engagement of interrogating their own environmental assumptions, ideologies, and practices. A follow-up assignment might ask students to compare/contrast the “findings” from their game play autoethnography to other environmental narratives, such as those found in television shows, social media, or news outlets.

### *Rhetorical Literacy*

In many ways, according to Cook, rhetorical literacy builds from critical literacy as it allows students to develop “an awareness of [their] own ideological stance as well as the given audience’s

stance(s)” and equips them with capability to use “rhetorical tools to create and shape meaning within the contexts of their ... situation” (10). Of particular interest are the ways digital games present rhetoric and rhetorical situations. Game designer and media studies scholar Ian Bogost calls this *procedural rhetoric*, which he argues is “the new type of persuasive and expressive practice at work in artifacts” such as video games (3). Bogost defines procedural rhetoric as

the practice of persuading through processes in general and computational processes in particular. Just as verbal rhetoric is useful for both the orator and the audience, and just as written rhetoric is useful for both the writer and the reader, so procedural rhetoric is useful for both the programmer and the user, the game designer and the player. Procedural rhetoric is a technique for making arguments with computational systems and for unpacking computational arguments others have created. (3)

Bogost makes a further claim about the persuasive nature of procedural rhetoric, arguing that “procedures are sometimes related to ideology; they can cloud our ability to see other ways of thinking: consider the police officer or army private who carries out a clearly unethical action but later offers the defense, ‘I was only following procedure’” (3).

*The Sims Freeplay* presents students with the opportunity to identify the ways in which procedural rhetoric not only unfolds during game play, but more importantly, how it positions environmental ideologies. According to the objectives of the game, students must consistently complete tasks that will earn the Sims money. Because planting GMO seeds can produce plants that earn more money, student-players can plant these seeds in the name of following procedure. If the GMO seeds do produce normal plants, then the students may feel justified in their choice. However, if the seeds produce a Sim-Eating Plant, they are faced with a reality that forces them to reflect on their planting decision and whether they made the right choice given the outcome. Suddenly, the environment is no longer a commodity but rather an actively hostile entity, one that pits Sims (humans) against what essentially amounts to a plant monster (nature “gone wild”). Students likely would point out that the Sim-Eating Plant mimics

scenarios common in post-apocalyptic narratives across genres, in which science pushes the boundaries of what was thought to be capable (in this case, with GMOs) and what results is a world ravished by frightening creatures and environmental collapse. Such a comparison establishes an antagonistic relationship with the environment, flipping the more comfortable, traditional narrative of humans conquering nature into one of nature conquering humans. Bogost states, “we often talk about procedures only when they go wrong ... but in fact, procedures in this sense of the word structure behavior; we tend to ‘see’ a process only when we challenge it” (3). What students can challenge in this scenario are the ways the game mechanics have embedded environmental rhetorics, narratives, and ideologies within the game itself.

An assignment that supports such a challenge is a visual analysis and critique. First, students would create a visual analysis with either a short video or screen shot (done easily with many devices’ screen capture function) taken during game play. Using text to create annotations within the video or on the screen shot, students would analyze specific moments of in-game procedures (or mechanics) and how those procedures/mechanics allow for particular behaviors toward the virtual-world environment. These annotations could be created through the edit function on YouTube, web-based hotspots that can be moused over, or other means; regardless, the annotations provide localized analytical insights on the game and function similarly to the comment feature of Microsoft Word’s track changes. Then, students would critique those procedures/mechanics by addressing questions such as: What narrative(s) is advanced by the procedures/mechanics? How does this narrative mimic or challenge others within the genre? What ideology(ies) is supported by the procedures/mechanics and why? How is communication about the environment shaped by these narratives, ideologies, and procedures/mechanics?

### *Ethical Literacy*

While rhetorical literacy equips students with the know-how to contextualize and shape meaning, ethical literacy “enhance[s] their decision making by making them more cognizant of ethical implications of their decisions, including their responsibilities as

citizens and workers in their society” (Cook 15-16). Gardening in *The Sims Freeplay* presents a quandary about the ethics of GMOs. Continuing the discussion of environmental ideologies identified through students’ critical and rhetorical literacies, the game seems to turn gardening from its more commonly associated ecocentric—perhaps even conservationist—ideology into something more anthropocentrically focused. In the “real world,” students might assume gardening is a sustainable practice, the idea being that in growing our own food we make better use of resources and cut down on the negative environmental and health impacts the industrialized food system causes. This assumption is based in the ways sustainable gardening has been rhetorically constructed to be a positive activity, for example, in decreasing our “carbon footprint,” a term in itself that has become a rhetorical trope of sorts. In the game’s virtual world, however, gardening has the potential to threaten the safety of Sims. Students could make the argument that when the Sim—and player herself—chooses to plant GMO seeds, the Sim (and therefore student-player) supports the production and distribution of GMOs, placing personal wealth ahead of health and environmental concerns. On the other hand, students also could argue that the Sim/player is simply “following procedure,” following the rules of the game by making the most logical choice of profiting in the name of further developing the Sim world, ethics be damned.

When students closely examine the rhetoric at play (again, pun intended), when they explore tropes, genres, and other rhetorical aspects, they can see, as astrophysics professor Adam Frank explains, “the way [games] take the tropes of the standard narrative[s] and both unpack them in new ways and hijack them for [their] own ends” (par. 12). Therefore, students can play out the gardening scenario in multiple ways, see the different outcomes, and identify the problems that arise from those outcomes. Gee argues one of the benefits of gaming’s simulations is that they provide a low-stakes environment for a student-player to

think of himself as an active problem solver, one who persists in trying to solve problems even after making mistakes; one who, in fact, does not see mistakes as errors but as opportunities for reflection and learning ... leav[ing] himself open to ... finding

new ways to solve new problems in new situations. (*Good Video Games* 44)

Digital games spaces, therefore, offer students a safe space to test-run problem solving strategies and to identify alternative solutions that are more consciously and ethically grounded in the tenets of environmental awareness.

To help students practice problem solving and identify alternative solutions, instructors might assign a game design project. This project asks students to conceptualize their own digital game that involves more conscious environmental considerations. Games could be based on scenarios from *The Sims Freeplay*, post-apocalyptic games, or other games students have played, but the goal of the project is to create a game that affords *different* opportunities for environmental decision making, ideological affiliation, and storytelling. It is important to note that this game design project does not have to entail the physical coding (whether through web-based platforms or software such as Adobe Gaming SDK) of the game itself. Rather, this project requires students to do the conceptual work of game design and development. This means students must create a storyboard, avatars, and a virtual environment, as well as determine basic game mechanics (for example, how an avatar levels up) for their game. In this project, writing and design come together to provide students an opportunity to create a game that incorporates alternate ways of thinking, playing, and communicating about the environment—likely through more ethically minded storylines, quests, and avatars.

## CONCLUSION

The argument here has not been to use writing classrooms to build communities of gamers. Rather, it has been to use digital games to build communities of rhetorically savvy and technologically innovative thinkers and writers who are engaged in classroom, community, and global discussions about the urgency of current environmental crises. The reluctance of writing instructors to consider digital games' impact on the development of environmental awareness and/or to incorporate gaming into writing classrooms, often stems from the misconception of a virtual world-material world binary, which Rebekah Shultz Colby and Richard Colby argue arises from



“traditional conceptions of work and play that highlight differences between classroom space and game space as binary opposites” (302). Work and play, physical classroom and virtual world, however, can and do enhance one another and more importantly, allow students to see rhetoric, writing, and the environment in both familiar and new, engaging ways. With more than 150 million Americans and 1.2 billion people worldwide playing digital games, it’s likely some of them are in our classrooms.

Gee claims, “the power of video games is not in operating an avatar *per se*. Rather, it is in situating one’s body and mind in a world from the perspective of the avatar ... What video games do— better than any other medium—is let people understand a world from the inside” (*Good Video Games* 16). When students can situate themselves from a different perspective, they are able to establish unique relationships between themselves and their avatars; the material world and game world; and their social and cultural values and others’ values. Furthermore, as Bogost argues, digital games can “disrupt and change fundamental attitudes and beliefs about the world, leading to potentially significant long-term social change” (ix). If we encourage and provide assignments that support digital game play in our writing classrooms, we allow students to hone their communicative skills through proactive discussions and writing within and beyond the classroom. Such work draws upon written, visual, digital, and technological skills in order to develop students’ critical, rhetorical, and ethical literacies in ways that allow them to advocate for solutions to important environmental problems that affect not only themselves but also future generations.

## WORKS CITED

- Bogost, Ian. *Persuasive Games: The Expressive Power of Video Games*. MIT Press, 2007.
- Cook, Kelli Cargile. "Layered Literacies: A Theoretical Frame for Technical Communication Pedagogy." *Technical Communication Quarterly*, vol. 11, no. 1, 2002, pp. 5-29.
- Corbett, Julia B. *Communicating Nature: How We Create and Understand Environmental Messages*. Island Press, 2006.
- Damassa, David A., and Toby D. Sitko. "Simulation Technologies in Higher Education: Uses, Trends, and Implications." *ECAR Research Bulletin*, vol. 3, 2010, pp. 1-9.
- Entertainment Software Association. "Essential Facts about the Computer and Video Game Industry," 2015. <<http://www.theesa.com/wp-content/uploads/2015/04/ESA-Essential-Facts-2015.pdf>>.
- . "Essential Facts about the Computer and Video Game Industry," 2016. <<http://essentialfacts.theesa.com/Essential-Facts-2016.pdf>>
- Frank, Adam. "Why Video Games Matter." *Cosmos & Culture*, vol. 13, no. 7, 28 April 2015. <<http://www.npr.org/sections/13.7/2015/04/28/402741863/why-video-games-matter>>.
- Gee, James Paul. *Good Video Games + Good Learning: Collected Essays on Video Games, Learning and Literacy*. Peter Lang, 2007.
- . *What Video Games Have to Teach Us about Learning and Literacy*. 2nd ed. Palgrave Macmillan, 2007.
- . "Why Are Video Games Good for Learning?," n.d. <<http://www.academiccolab.org/resources/documents/MacArthur.pdf>>.
- Hertel, John P., and Barbara J. Millis. *Using Simulations to Promote Learning in Higher Education: An Introduction*. Stylus Publishing, 2002.
- Inside Higher Ed. "Students and Video Game Addiction," 28 Dec. 2012. <<https://www.insidehighered.com/views/2012/12/13/students-and-colleges-vulnerable-computer-gaming-addiction-essay>>.
- Jones, Steve. "Let the Games Begin: Gaming Technology and Entertainment among College Students." Pew Internet &

- American Life Project, 6 July 2003. <[http://www.pewinternet.org/files/old-media/Files/Reports/2003/PIP\\_College\\_Gaming\\_Reporta.pdf.pdf](http://www.pewinternet.org/files/old-media/Files/Reports/2003/PIP_College_Gaming_Reporta.pdf.pdf)>.
- Kelly, Shawna and Bonnie Nardi. "Playing with Sustainability: Using Video Games to Simulate Futures of Scarcity." *First Monday*, vol. 19, no. 5, 2014.
- Lean, Jonathan, Jonathan Moizer, Michael Towler, and Caroline Abbey. "Simulations and Games: Use and Barriers in Higher Education." *Active Learning in Higher Education*, vol. 7, no. 3, 2006, pp. 227-242.
- McGonigal, Jane. "Gaming Can Make a Better World." *Ted*, 2010. <[http://www.ted.com/talks/jane\\_mcgonigal\\_gaming\\_can\\_make\\_a\\_better\\_world/transcript?language=en](http://www.ted.com/talks/jane_mcgonigal_gaming_can_make_a_better_world/transcript?language=en)>.
- Moberly, Kevin. "Composition, Computer Games, and the Absence of Writing." *Computers and Composition*, vol. 25, no. 3, 2008, pp. 284-299.
- Mulgan, Geoff. "It's Life Jim, but Not as We Knew It." *HuffPost Tech*, 28 Jan. 2013. <[http://www.huffingtonpost.co.uk/geoff-mulgan/its-life-jim-but-not-as-we-knew-it\\_b\\_2550912.html](http://www.huffingtonpost.co.uk/geoff-mulgan/its-life-jim-but-not-as-we-knew-it_b_2550912.html)>.
- Northern Illinois University. "Experiential Learning." <[http://www.niu.edu/facdev/resources/guide/strategies/experiential\\_learning.pdf](http://www.niu.edu/facdev/resources/guide/strategies/experiential_learning.pdf)>.
- United Nations Environment Programme. "Planning and Management of Lakes and Reservoirs: An Integrated Approach to Eutrophication," 2000. <<http://www.unep.or.jp/ietc/Publications/TechPublications/TechPub-11/>>.
- University of Colorado-Denver. "What is experiential learning?," 2016. <<http://www.ucdenver.edu/life/services/ExperientialLearning/about/Pages/WhatisExperientialLearning.aspx>>.
- Young, Jeffrey R. "5 Teaching Tips for Professors— from Video Games." *The Chronicle of Higher Education*. 6 Jan. 2016. <<http://chronicle.com/article/5-Lessons-Professors-Can-Learn/63708/>>.

**Jen England** is an assistant professor of professional writing and rhetoric at Hamline University. Her work interrogates digital rhetorics and technologies, particularly the ways in which they can be instrumental in advancing multiliteracies, engaged learning, and advocacy work in areas such as the environment, communication, and pedagogy. She is interested in bringing these areas together into productive conversations about the ways we can do good in the world. Her research and pedagogy inform each other, and she often teaches courses that approach writing from critical multimodal perspectives.