"Green Washing" the Digital Playground: How Virtual Worlds Support Ecological Intelligence…or Do They?

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ABSTRACT

An emerging approach to teaching young people about sustainability is the use of immersive game spaces and virtual environments. This project focuses on children's virtual worlds with an environmental values orientation to examine the ways these worlds work as vehicles of sustainability literacy. These worlds position themselves explicitly as ethical and sustainable spaces, focusing on environmental responsibility and stewardship. Yet, they contain only a veneer of ecological thinking, rely heavily on consumerist logic, and provide mixed messages for young people about what it means to conserve and consume. We use the lenses of Value Sensitive Design (VSD) and Ecocriticism to interrogate these technologies, exploring how the discursive practices of these spaces support or constrain different visions of a sustainable world.

Categories and Subject Descriptors

K3.1 [**Computer uses in Education**]; K4 [**Computers and Society**]
K8 [**Personal Computing**] Games

General Terms

Design, Human Factors

Keywords

Virtual Worlds; Sustainability; Ecological Intelligence; Children and Youth

1. INTRODUCTION

The rhetoric of environmental sustainability is everywhere – in corporate advertising, mass media, government policy documents, and school curricula. Yet, defining sustainability, or even identifying sustainable choices among myriad options can frustrate the "greenest" among us [2]. Sustainability literacy, or the ability to critically analyze ecological problems at the human, social and global scale, will be an important cognitive capacity in the coming decades [11]. The multi-lifespan nature of environmental challenges, in fact, make it essential to bring young people into envisioning both the problems and possible solutions. Thus, the issue of environmental

sustainability and its representation in media forms for young people is of critical and enduring concern. Scholars have called for more nuanced approaches to sustainability literacy that promote critical thinking, problem solving, and "ecological intelligence", not simply awareness or sensitivity to the problem [3,15].

An emerging approach to teaching young people about sustainability concepts and practices is the use of immersive game spaces and virtual environments. These spaces can be used for modeling environmental problems, conditioning sustainable behaviors (e.g., recycling, energy conservation), or disseminating information that might affect a young person's choices regarding the real environment. Often these spaces are informal learning contexts that are highly motivating; children use them to have fun and engage socially with peers, or explore a particular interest or hobby. Scholars in education, literacy, and media studies have suggested that virtual worlds have the potential to be transformative educational spaces [12,13], but there is still a great deal yet to be understood about their use and the messages they contain [1,8,9].

2. METHOD

This study uses Ecocriticism as a theoretical lens and Value Sensitive Design (VSD) as a methodological approach to analyze three commercially produced virtual worlds designed for children to explore how the discursive practices of these spaces support or constrain different visions of a sustainable world. Ecocriticism has most often been applied to literary texts [6]; however, it can be used to analyze a wide range of media artifacts, print and electronic. It has recently been used to analyze the environmental ethos of massive multiplayer video games [7]. VSD has been used to evaluate a range of technologies and systems, including surveillance cameras, software agreements, and even intentional communities [4,5,10] Ecocriticism and value sensitive design work together to identify the discursive practices of value-laden technologies, and analyze how these values are supported or constrained for different stakeholders, including parents, children, educators, and policy makers.

Three worlds designed expressly for children were selected from a range of virtual worlds by their characteristics and

ecological themes: EcoBuddies (ecobuddies.com), MiniMonos (minimonos.com), and Pixie Hollow (pixiehollow.go.com). While they all contain strong environmental representations, each approaches the value of environmental sustainability in different ways. Material for this investigation was drawn from technical and documentary features of the sites, as well as investigators' interactions with the sites as users, employing techniques established in prior investigations [10]. Investigators also identified and interacted with supplementary online materials related to these virtual worlds including user-generated content (e.g. blogs and websites, YouTube channels), review sites (e.g. Commonsensemedia.org), and website analytics.

From the rich literature on sustainability and several environmental science curricula [e.g. 2,3,14], the investigators developed a framework for coding representations of environmental themes in media, composed of three thematic levels (Societal, Ecological, and Personal) and twelve sub-themes. This framework was used to guide the participant observation and site analysis work. The analyses presented below are illustrative, not exhaustive. There are myriad technical features and practices that could be presented in depth, but this analysis emphasizes those features that support or constrain stakeholders' perceptions of the environment and sustainable practices.

3. FINDINGS

Our analysis compared each of the sites, using an iterative, qualitative approach, to the framework of environmental themes. These sites focus much of their efforts on fewer than half of the 12 sub-themes, and most often on issues of individual behavioral change. We acknowledge this as a good initial step, particularly for younger learners, but there are numerous themes that are either ignored in these sites, presented in ways that are internally contradictory, or counter to more nuanced conceptions of sustainability literacy. Below we provide brief narratives on these spaces to unpack how some of the value propositions are instantiated in the virtual world design.

3.1 Virtual World Descriptions

MiniMonos—the motto of which is "Love to Play, Love the Planet"—is a virtual world populated by monkey avatars that live and play on a monkey-shaped island paradise. Games on the island have different themes and vary in the degree to which they pertain to sustainability and eco-friendly behaviors. There are games in which the avatar can sort recycling, which simply collects over time at every avatar's tree house, or others that allow a user to clean trash out of a lagoon that is filled with paint cans, plastic bags, and oil containers. We detected a majority vs. minority world ethos, both in the parent documentation and game-related practices, including the exoticization of non-Western cultures. Items for sale at the outpost Traderz are mostly made of reclaimed materials such as car seats, airplane wings, and old toilets. The feeling is that one is purchasing the broken bits and pieces left over from a colonizing society. The acquisition of these goods is not related to the games that explicitly emphasize environmental cleanup, creating a disconnect between the accumulation of goods and environmental impact. We find this problematic for a game that places such emphasis on loving the planet.

In **EcoBuddies**, users adopt Hamster avatars, which they use to navigate a virtual game space that purports to teach and educate children about sustainability and the environment. While EcoBuddies by it's very name attempts to place an emphasis on sustainability and ecological impact, the games within the virtual space do very little to support this. The website itself is a Green Certified Site, but within the virtual space, environmental education takes place in the form of quizzes or videos that mostly emphasize negative human impact on nature. An emphasis on consumerism prevails, as the games that users play give them coins with which they can buy outfits, houses, cars (electric, of course), costumes (with sustainability themes, such as recycle bins), and pets. An aspect of the game world that attempts to impart knowledge related to sustainability is the random placement of recycling bins throughout different locations that, when clicked on, display pieces of trivia about recycling such as, "It takes 4000 years for a glass bottle to decompose," or "5 plastic bottles are enough to make stuffing for a ski jacket." As with MiniMonos, for a world that places so much emphasis on the environment, the activities and virtual spaces do not seem to reflect the stated purpose of the site as "a great way to teach kids about the environment."

Pixie Hollow is a world of fairies—and more recently, the addition of male avatars called sparrowmen—where participants can play numerous games and take part in group activities in order to gain pixie dust and prestige, translating into ever-higher levels of status within the game space. The wilderness—and area of the world that is dangerous as opposed to the friendly, domesticated nature of Pixie Hollow proper—is menacing and hazardous for its animal inhabitants, who are constantly in need of help from fairies and sparrowmen. This is a rather intriguing twist on ecocritical notions of nature as being better off without human invasion. Granted, these are pixies, but they follow other humanistic qualities, such as consumerism, so there is still an invasion of human cultural elements within the virtual space.

4. CONCLUSIONS

This project, in analyzing the ways sustainability literacy and ecological rhetoric appears in commonly used virtual worlds for children, seeks to open an important conversation about the tools used to promote ecological intelligence. The immersive tools examined in this study

contain a veneer of ecological thinking, but rely heavily on the commercial, consumerist logic of many virtual spaces for children. Moreover, the activities these sites choose to convey environmental thinking often conflict with underlying principles of sustainable living, providing mixed messages for young people about what it means to conserve and consume. These spaces profess to promote a culture of stewardship, but reward it through the accumulation of "stuff", albeit digital, and in doing so reinforce the link between commerce, acquisition, and social status.

While it is too early to suggest long-term effects of these spaces on children's learning and development, this foundational work sets the stage for an ongoing investigation of this area. It presents an early examination of these spaces as cultural artifacts of the public discourse on the environment and a child's place in promoting a sustainable world. Future work, already in development, will further inform science and ecology curricula, as well as the design of immersive informal learning spaces for young people.

5. REFERENCES

[1] Black, R. (2010). The language of Webkinz: Early childhood literacy in an online virtual world. *Digital Culture and Education*, *2*(1), 7-24.

[2] Blewitt, J., & Vare, P. (2009). Sustainability literacy: Two perspectives. *Handbook of sustainability literacy.* Available at: http://www.sustainability-literacy.org/

[3] Farley, J., Erickson, J., & Daly, H. (2005). *Ecological economics: a workbook for problem-based learning.* Washington: Island Press.

[4] Friedman, B., & Kahn, P. (2003). Human values, ethics, and design. In *The Human-Computer Interaction Handbook* (pp. 1177- 1201). Mahwah, NJ: Erlbaum.

[5] Friedman, B., Kahn, P. H., Jr., & Borning, A. (2006). Value Sensitive Design and information systems. In P. Zhang & D. Galetta (Eds.), *Human-computer interaction and management information systems: Foundations* (Vol. 1, pp. 348-372): M.E. Sharpe.

[6] Garrard, G. (2004). *Ecocriticism*. London: Routledge.

[7] Kaplan, M. (2010). *Greening the gamescape: How virtual game worlds can reflect real-world environmental values* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (AAT 3411854)

[8] Marsh, J. (2010). Young children's play in online virtual worlds. *J. of Early Childhood Res.*, *8*(1), 23-39.

[9] Merchant, G. (2009). Literacy in virtual worlds. *J. of Res. in Reading*, 32(1), 38-56.

[10] Meyers, E., Nathan, L., & Unsworth, K. 2010. Who's Watching Your Kids? Safety and Surveillance in Virtual Worlds for Children. *J. of Virtual Worlds Res.(3)*2, http://journals.tdl.org/jvwr/article/view/1890.

[11] Orr, D. (1992). *Ecological literacy: Education and transition to a postmodern world*. Albany: SUNY

[12] Shaffer, D., Squire, K. D., Halverson, R., & Gee, J. P. (2005). Video games and the future of learning. *Phi Delta Kappan*, *87*(2), 105-111.

[13] Steinkuehler, C. A. (2007). Massively multiplayer online gaming as a constellation of literacy practices. *E-Learning*, *4*(3), 297-318.

[14] Vare, P. and Scott, W. (2007) Learning for a change: Exploring the relationship between education and sustainable development, *J. for Education for Sustainable Development*, *1*(2), 191-198.

[15] Williams, M. (2004) Preface. In N. Potter (Ed) *See change: Learning and education for sustainability*, Parliamentary Commissioner for the Environment. Wellington, New Zealand.