Videogames have changed: time to consider 'Serious Games'?

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Interest in digital 'Serious Games' has been growing for the past three years across nonprofit, government and media sectors. A few development educators are already involved, and that number will likely grow significantly in coming years in both North and South. **Benjamin G Stokes of NetAid** *explores three educational opportunities in games - raising public awareness, affecting behavior and empowering learners - and discusses collaborative ways to move the agenda forward.*
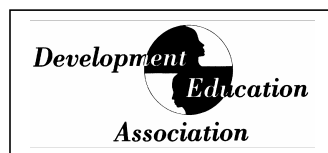
The term 'Serious Games' is increasingly used for digital games whose primary goal goes beyond entertainment to education, outreach or training. The term's use has grown largely through the Serious Games Initiative, which started in 2002 at the Woodrow Wilson Center for International Scholars in Washington, D.C. Today, hundreds attend conferences and collaborate online to find out what Serious Games might bring to their jobs as educators, political organizers, academics, game designers and more.

Despite videogames' existence as a form of mainstream media, the adoption of Serious Games by educators and theorists is just beginning. One likely reason is the reputation of videogames as shallow and often violent indulgences. Historical comparison with the film industry reminds us that it was only 30 years ago that commercial movies began to make inroads with academics, but today film is widely studied on its own and in confluences across the university. As the first generation to grow up with videogames approaches middle age, a similar tipping point in games' relevance to educators is drawing near.

Opportunity 1: public awareness campaigns

When you hear 'videogames' do you still think of teenage boys playing in the isolation of their basements?   Look again. Increasingly, the Internet allows games to become social experiences across vast distances. Of equal importance is the demographic shift: the average player in the U.S. will turn 30 next year and the industry's Entertainment Software Association says that one-in-three is female.

Consider 'advergaming,' which is gaining in popularity with awareness campaigns desperate to combat the public's growing indifference to television and print ads. A good example is 'Smokeout Café,' released by the American Cancer Society in late 2004 (www.nynjevents.org/site/PageServer?pagename=SmokeoutCafeGame).   The game challenges players to 'throw' orange wristbands at moving cigarettes, and each eliminated cigarette earns you points. The wristbands are inscribed with the slogan '*Livefree. Smokefree.*' and can be ordered for $1US to be worn offline as part of a larger awareness and fund-raising effort.

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Advergames have several advantages over Public Service Announcements on television or in print. One is the comparatively low cost of such games - though they're still not cheap at $10,000 to $500,000 US. Perhaps more importantly, the player is exposed to the

message for as long as they're having fun – from minutes to hours. Finally, advergames can supplement messaging with extending learning on demand. In Smokeout Cafe, clicking on 'reasons to quit' will immediately lead you to lessons backed with statistics and stories. Such lessons in a traditional advertising context would require the viewer to call a phone number, turn to their web browser or visit a location in person.

Development organizations are giving advergaming a try. UNICEF, for example, has succeeded in attracting 11,000 web visitors a day to play at 'Becoming a UNICEF World Hero' (Richtel, 2005). As educators become web savvy, games will continue to increase their ability to reach and draw in online audiences.

Opportunity 2: affecting behavior

After raising awareness, many educators seek to inspire behavioral change. In 2002, an online game began inspiring participants to risk their (real) lives - that's some serious motivation! This military recruiting tool, called simply 'America's Army,' aims to deliver the values and messages of the U.S. Army to young people and has reached nearly five million players over three years.

The worldview promoted by America's Army goes beyond messaging. In the game, individuals and multiplayer teams train to complete tactical missions that, compared with the tiny advergames, are much more immersive and prolonged. At a surface level, the vehicles and weapons depicted in the game closely mimic their real-world counterparts. At a deeper level, the game makes efforts to mirror the systemic requirements of the real-life Army, from deployment to teamwork and hierarchy. In this way, following the Army's worldview in-game is necessary to win. For example, participants who do well earn 'honor' points that are required to enter restricted portions open only to those of senior rank; for players working as medics, a primary focus lies in and responding to the calls of injured players.

The game's recruitment results aren't public, but military spending patterns and occasional inside quotes (Schiesel, 2005) indicate that it may be more effective than the Army's traditional advertising. Yet the game's call to enlist is unusually soft. Each player simply experiences the Army's structure messaging for hours of emotional intensity. What can compare? Books and videos can engage for hours, but actually inhabiting a space can profoundly put the learner in someone else's shoes. At its heart, America's Army is a deep role-play, but with players interacting with emotion in their own time outside the context of any classroom. The experiential depth means

that those who enlist after playing do so with a relatively detailed, structured and hopefully accurate vision of their future.

A very different and successful behavioral game was developed by Debra Lieberman *et al* to 'improve self-management of diabetic children.' The game's heroes are diabetic elephants Packy and Marlon, and the backdrop is a summer camp stricken by rodents who have scattered food and diabetes supplies. The player's goal is to keep their characters' diabetes under control by monitoring blood sugar, providing insulin and managing food intake.

The result has been a 77% decrease in hospitalization rates for youth given a copy of the game (Brown *et al* 1997). To achieve this, Lieberman developed the game based on theories of experiential education. It's a good fit: common educational goals for diabetic children parallel what experiential education can deliver, including quick retention and real-world performance. The remarkable decline in hospitalization rates supports an experiential approach to game design when seeking to affect behavior.

Opportunity 3: empowerment through game design

In a social justice context, the goal of changing behavior is typically to empower learners toward a better future. One role for digital games is to ground hopes for this future into more applied thinking, according to Dave Rejeski, head of the Serious Games Initiative. For long-term thinking in particular, Rejeski believes that games might bring to life vital implications that, in practice, are often overlooked.

Much as a picture can be worth a thousand words, an interactive game can trigger profound insights for long-term thinking. Rejeski emphasizes two aspects, one of which is an understanding of complex systems - a bird's-eye-view which Rejeski refers to as 'top sight.' The need for such tools can be observed, for example, in the difficulty of teaching complex concepts such as sustainable development or global interdependence. A second aspect more literally explores time by adding foresight to the simulation thus connecting actions in the present with implications in the future.

One long-term thinking game is MassBalance, designed to 'entertain and educate players about some of the nuances of the Massachusetts' [state] budgeting process' (www.playmassbalance.com). Players are challenged to successfully balance the state budget. By offering the game for free online, many people - from journalists to academics to state

representatives - are being pushed experientially to consider longer term implications of annual budgeting decisions. The approach is spreading: similar budget games have been created in the U.S. for Utah, California, Maine, Minnesota, New Hampshire and Texas.

One opportunity with games like MassBalance is to align learning with participation. Many games integrate the simulation within an online community or connect it to government communication channels. By doing so, what might otherwise be passive learning in a typical budget news story becomes an integrated structure within the larger contexts of democratic discourse and participation. In this way, the empowerment derived from the individual's long-term thinking is actively leveraged into media and government.

When the design emphasis turns to skills that make the greatest difference, a significant challenge lies in determining what should be taught and what left out. Shaffer *et al* (2004) summarize one approach where games may change the future of learning: take a hint from existing communities of practice. For example, if real-world activists are already succeeding in on-the-job training for generations of novices, then perhaps they are already using the shortcuts between action and context which are easiest to pass from one individual to the next.

An interactive game can trigger profound insights for long-term thinking.

Unfortunately, such in-person learning is often only available if you're a good investment for the activist-trainer: probably at least a high school graduate willing to work full-time and unpaid for several weeks. In most cases this effectively limits access. Such limitations are unacceptably narrow when the learning is about empowering citizens to improve society.

Can games make learning from communities of practice accessible? Shaffer *et al* (ibid.) claim the answer is yes, so much so that they declare games as necessary to understand the future of learning. They assert that the virtual worlds of digital games can teach vital social practices which are often otherwise inaccessible. Where we can observe communities of practice already teaching global citizenship, we can design games for learning that employ the shortcuts of professional activists.

In the North, one place where many professional activists are already working online can be seen in the proliferation of advocacy websites. Such website infrastructure presents an unusual possibility to connect game conditions to real advocacy. NetAid prototyped this approach in early 2004 with a challenge add-on to an online game for adolescents called Peter Packet. The animation portion, developed by Cisco's Creative Learning Studio, invited students to help Peter fight global

poverty over the Internet by battling hackers and viruses. Characters for the background story were drawn from three of NetAid's partner field projects in Haiti, Zimbabwe and India.

The extension Challenge was a 10-day online competition to earn points by raising awareness about the stories of poverty told in the animated game. Players earned five points if someone donated in their name (regardless of the amount donated) and two points if someone clicked on one of their awareness-raising emails. The temptation to spam was moderated by listing the parent's email address as the sender on outgoing email. Continuity was provided by maintaining the look and feel, but the design then leveraged several components of the service learning tradition. Reflection was encouraged by asking the recipients of the students' emails to start a dialogue using model questions with the student. Second, the service of raising awareness was personally relevant and had real-world impact. Thus the Challenge prototype provides one early model for how games might work hand-in-hand with online service learning.

The game-based motivation appeared quite effective with some students. One 11-year old girl said, 'Every day after school I went to check my points and the total money for poverty.' The top two competitors took enough action to each earn more than 50 points. The average Challenge participant sent five emails, and one in five participants received a donation. As far as the connection with the animated game, approximately 10-percent opted to sign up for the Challenge, indicating that traditional games may provide a bridge for more involved advocacy-based activity.

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Adding service into a game could be especially powerful given how players self-identify in videogames. More than with a book or movie, after a videogame it seems fair to claim pride in the hero's ultimate success because the player perceives their actions as responsible for the success of the game hero (Gee, 2003). In the animated portion of Peter Packet, this translates into emphasizing the identity of self-as-Peter-Packet, the superhero that succeeds in fighting global poverty. In addition, the Challenge follows in the service learning tradition and emphasizes real-world identity formation, and thus promotes the identity of self-as-real-world-awareness-raiser. In combination, hero and service learning identities reinforce each other, but also blend to form a third identity: self-as-Peter-Packet-with-real-impact. This last identity may be especially helpful in a big challenge of global citizenship education: to help the player identify as someone who is powerful enough to take real-world actions in fighting global poverty.

Collaboration to build game solutions

Despite the remarkable potential of the games described above, several barriers are likely to slow newcomers. We can minimize these barriers in the future by choosing approaches today that lay foundations for broader accessibility. This article concludes by matching three barriers with suggested approaches to move the agenda forward.

Educational games are inherently interdisciplinary and the first predictable barrier lies in the awkwardness of collaboration. A good example is the quick emotion stirred by the term 'edutainment' (a combination of education and entertainment). Many educators contend that edutainment has largely produced shallow products focused on short-term test scores. Conversely, game developers counter that edutainment has alluded to the visuals of games while overlooking the centrality of fun and pleasure. Frequently they have both been right.

One resolution is to encourage communities which promote both educating and entertaining as professional practices rather than simple skills. In the process, professionals become stewards who depend on their peers for community standards. The popularity of the Serious Games Initiative is already building momentum for such relevant sub-groups as Games for Change (www.seriousgames.org/gamesforchange) which focuses on social change through nonprofit professionals and their partners.

A second barrier is the cost of development. As pop-culture videogames align more closely with Hollywood and its special effects, fundraising expenses often include both professional video and technical engines. To help level the playing field, development educators should reward approaches to game production that are designed to leave behind tools and media assets for low-cost repurposing in the spirit of open source. Universities can help in this effort by building collaboration between emerging games studies programs and organizations dedicated to the public good. Finally, with games industry revenues outpacing Hollywood, commercial partnership remains a tempting, if elusive target. One backdoor exists in the free tools that some companies offer so their players can create 'mods' (modified versions of the original game). Building within commercial games will help industry envision broader partnership and thus deserves support.

After construction, many games will need to overcome a third barrier: distribution. Even if a new game fits within mainstream traditions, competition in these over-saturated channels means standing out against marketing campaigns often costing 20% beyond game development. As a sector, social impact games may need to create their own distribution channel to parallel what public radio and television provide for broadcast media in many countries. Individual games can be

encouraged in approaches that prioritize distribution as part of game design and that leverage partnerships beyond traditional game channels. Throughout, we can minimize the effect on the learning divide by supporting explicit North-South distribution and content sharing.

Game-based solutions can already provide outreach that goes beyond messaging to affect behavior and empower learners with deep understandings of solutions, effective social practices and powerful identities. Today's development problems cry out for solutions and digital games will likely be of growing relevance to development educators. Increasingly, the key question may be how quickly we can bring the expertise of the games sector to bear on our own work.

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