

Digital literacies for the disengaged: creating after school contexts to support boys' game-based literacy skills

Constance Steinkuehler and Elizabeth King

Constance Steinkuehler is Assistant Professor and Elizabeth King is Project Assistant, both at the University of Wisconsin-Madison, Madison, Wisconsin, USA.

Abstract

Purpose – This paper aims to review the structure and format of an after school incubator program that leverages online games for literacy learning, particularly for adolescent males. It also aims to describe its dual function as both quasi-natural context and design experiment laboratory and to discuss some early findings that illustrate the kinds of literacy practices the authors are beginning to see within their homegrown community to date.

Design/methodology/approach – For the past year, the authors have been engaging game-loving boys in digital and print literacy practices, not by playing matchmaker between them and those game communities that engage in such practices naturally, but by growing such a community of their own. Following the lead of other games-based educational programs and known characteristics of game-related indigenous online communities, the design encourages distributed expertise and collective intelligence in place of standardization and peer-to-peer learning in the form of modeling and networked apprenticeship.

Findings – The goal is to leverage teenage boys' existing interests in games to strengthen and enrich their engagement in literacies with payoff both in school and beyond. The findings suggest that the laboratory has met with initial success, particularly in terms of the use of literacy as a tool for solving problems, researching and assembling online multimodal game-related resources, and synthesizing in-game and out-of-game information.

Research limitations/implications – There are challenges inherent to taking this sort of "piggyback" approach to literacy learning, yet some characteristics that emerge from such approaches warrant further investigation. Specifically, virtual worlds enable what we call "networked apprenticeship" and function as "levelers" in their ability to let mastery rather than credentials decide who is considered expert in any given situated interaction. Such social contexts for learning, despite the challenges of fostering them, warrant additional research.

Practical implications – While previous literature has blamed videogames as the culprit behind boys' lagging success in literacy-related coursework and assessments, this program inverts this equation and instead investigates the ways in which games can function as a sort of "gateway drug" for important digital literacy practices.

Originality/value – The paper focuses on a program whose target audience is adolescent boys identified as "at risk" and failing in literacy-related classes yet highly motivated by games.

Keywords Case studies, Internet, Indoor games, Boys, Learning, Literacy

Paper type Case study

As "games and literacy" scholars, we have tried to make the case that games, especially online games, give rise to important digital literacy practices, that these digital literacy practices are cognitively complex and productive in the everyday (and future) lives of adolescents and young adults, and that they can be seen as aligned with acknowledged goals of education (as reflected in national standards, for example, although not necessarily the recent "back to basics" movement of No Child Left Behind policies) rather than in competition with them. Yet the news on boys in schools, the population most interested in games in the first place, is fairly grim (Smith and Wilhelm, 2002). Only 65 percent of boys graduate from high school compared to 72 percent of girls (Greene and

Winters, 2006). Boys are three times more likely to be diagnosed with ADD or ADHD (Schneider and Eisenberg, 2006). They score substantially lower than girls on basic literacy assessments such as the NAEP test (Lee *et al.*, 2007) and consistently under-perform in and opt out of literacy related courses (Gilbert and Gilbert, 1998; Rowan *et al.*, 2002). By the end of high school, one in four boys with college-educated parents reads below basic level – meaning, they cannot read a newspaper with understanding (Kleinfeld, 2006). As Conlin (2006, para. 9) writes:

Once a boy makes it to freshman year of high school, he's at greater risk of falling even further behind in grades, extracurricular activities, and advanced placement . . . While the girls are busy working on sweeping the honor roll at graduation, a boy is more likely to be bulking up in the weight room to enhance his steroid-fed Adonis complex, [or] playing *Grand Theft Auto: Vice City* on his PlayStation2.

Are videogames the culprit? According to some accounts, yes. Recent reports cite that videogames are now the fourth most dominant medium, displacing print media in the lives of adolescent boys and young men (Mandese, 2004). In the *Reading at Risk Report* (Bradshaw and Nichols, 2004), the National Endowment for the Arts not only concludes that the literary reading rate among males has actually dropped over the last decade, resulting in an increase in the overall gender gap, but also claims that “our society’s massive shift toward electronic media” (videogames given as the quintessential example) is the major culprit. An early study (Harris and Williams, 1985) found that high school students who spend more time and money on videogames had poorer grades in English classes, although the correlations were small (–0.28 and –0.20 respectively). Given that adolescent boys play 13 hours a week on average compared to girls who average only five hours per week (Gentile *et al.*, 2004), however, such results are still somewhat disconcerting. One more recent study (Cummings and Vandewater, 2007) found that boys who game during the week report spending less time reading than their non-gaming peers; while the difference amounts to only two less minutes reading per one hour of gaming on weekdays (no differences found for weekends), it represents a surprising 30 percent decrease given the markedly small amount of time boys report they spend reading in the first place (only eight minutes per day on average). As one recent author asserts, “the more time your child spends playing videogames, the less likely he is to do well in school” (Sax, 2007, p. 63). Based on such claims, then, one might reasonably conclude that videogames are indeed the culprit behind boys’ lackluster literacy performance.

Yet, games and literacy scholarship has given rise to an equal number of opposing explanations and findings. In his seminal text entitled *What Video Games Have to Teach Us about Learning and Literacy*, Gee (2003) argues that videogames are a semiotic domain, that learning to play a game (or genre of game) is to gain a new form of literacy (one of many, as literacies are multiple), and that the study of games and learning is important to our understanding of how an individual comes to understand the “design grammar” of a semiotic domain generally. In a similar vein, Steinkuehler (2006a) analyzed a single turn of talk taken during routine play in a “massively multiplayer online game” (MMO) to show how participation in such virtual worlds is participation in a “big D Discourse” (Gee, 1999) requiring a complex and nuanced sets of multimodal social and communicative practices tied to the particular community within the game yet extending beyond it to include an online world of game-related fandom such as web sites, chatrooms, wiki, blogs, and e-mail. Steinkuehler (2007) extends this work by surveying this constellation of digital and print textual practices entailed in online gaming to demonstrate that such practices that not only meet state and national standards in reading, writing, and technology, but also at times even exceed them. And in yet another study, Leander and Lovvorn (2006) trace how such practices traverse both in-school and out-of-school contexts to create a “literacy network” that is consequential to students’ identity, agency, and engagement.

Furthermore, it is not only studies from the New Literacies movement (see New London Group, 1996) that challenge earlier denouncements against games; even recent survey studies with more restricted views of literacy run counter to earlier conclusions. For example,

in a recent examination of media in the lives of youth ages eight to 18, Roberts *et al.* (2005) find that youth who spend the most time playing videogames actually spend more time reading than those who play less. Earlier studies of the correlational relationship between games and school performance, typically measured in terms of grades or grade point average (GPA), have been conducted only as incidental explorations of larger survey work whose primary focus is on the relationship between videogames and violence, not videogames and learning *per se*, leaving a notable gap in the current research. What we need most on the issue is broad-scale survey studies of the relationship between games and literacy conducted by experts in education, not experts in aggression. Still, the relationship between games and literacy in the everyday lives of youth that appears to be emerging in those studies that do exist is one of complementarity rather than competition. So why, then, are not adolescent boys, the very population who most plays games, doing well in literacy related activities as a result?

The problem, of course, is access – not just access to the game technology itself but also access to the specific game-related practices most efficacious for literacy. Games are both technologies and communities of practice (Lave and Wenger, 1991), and their potential for learning must be understood along both terms. As a technology, games are simulated worlds that are “constructed by particular viewpoints to express particular ideas” (Squire, 2006). As such, they offer their players “designed experiences” (Squire, 2006) of the everyday world from new points of view (e.g., a White woman playing as an African American male in the scandalous parody of racist Los Angeles, *Grand Theft Auto III: San Andreas*) or from points of view that might be wholly inaccessible in regular life (e.g., watching how a civilization unfolds over 4,500 years in the fertile crescent in *Civilization IV*), or even experiences of whole new worlds that could never exist outside of games (e.g., the epic fantasy world of *Oblivion*). As Shaffer *et al.* (2005, p. 106) state:

More than a multi-billion dollar industry, more than a compelling toy for both children and adults, more than a route to computer literacy, video games are important because they let people participate in new worlds.

In terms of community, however, games are much more than the imagined world of some handful of designers. Rather, games (especially online games or virtual worlds) function as new “third places” (see Oldenburg, 1999) for informal sociability (Steinkuehler and Williams, 2006) and in their role as such, they are inhabited by communities (often, more than one) whose practices determine what knowledge, skills, performances, values, and dispositions are valued and therefore encouraged and which are not. And, as with most communities, access and membership for any one person is certainly not guaranteed – especially for those who do not already exhibit the requisite and valued intellectual abilities, attitudes, and skills.

For the past year, we have been engaging game-loving boys in digital and print literacy practices not by playing matchmaker between them and those game communities that engage in such practices naturally but by growing such a community of our own. Our target audience is adolescent boys identified as “at risk” and failing in literacy related classes yet highly motivated by games. Our goal is to leverage their existing interests to strengthen and enrich their engagement in literacies with payoff both in school and beyond. In this paper, we briefly review the structure and format of our after school incubator program, its dual function as both a quasi-natural context and design experiment lab, and some early findings that illustrate the kinds of literacy practices we are beginning to see within our homegrown community to date. We conclude with a broader discussion of the findings now beginning to emerge from this work, the challenges inherent to taking this sort of “piggyback” (Newkirk, 2002) approach to literacy learning, and the research questions we feel it raises for games related educational research more generally.

Incubating a games-based literacy community

Our goal has been to explore ways that we might leverage boys’ existing interests in games (see Barron, 2006) in order to engage them in practices that not only align well with schools, but also are meaningful in their everyday offline lives. Toward this end, in

October 2007 we created an after-school program for adolescent boys based the wildly popular, commercial online game *World of Warcraft* (*WoW*). The basic strategy of our approach is to create a community of high-end game practice that can act as an incubator for those literacy activities documented in previous research as a natural part of advanced gameplay (Steinkuehler, 2007). Table I provides an overview of those practices, a comparison of their habitat “in the wild” of everyday online *WoW* fandom versus in our design lab, the text genre of each, and the reading, writing, and technology standards each addresses.

Following the lead of other games-based educational programs (Squire *et al.*, in press) and known characteristics of game-related indigenous online communities (Jenkins, 2006; Steinkuehler and Duncan, 2009), our design encourages distributed expertise and collective intelligence (Levy, 1999) in place of standardization and peer-to-peer learning in the form of modeling and networked apprenticeship. We use the capacity of the in-game “guild” functions to structure our program so that the majority of the regular, weekly contact time is within the virtual world and on a private online guild forum, scheduling monthly face-to-face meetings (pizza parties) for more structured intentional learning activities, data collection, and assessments. Monthly meetings are held on our University campus at our games lab facility (see Figure 1). During the ongoing sessions during the week, we game together as a loose community, with undergraduate volunteers and graduate assistants acting as virtual ethnographers and mentors (we refer to it as “lifeguarding”) and participants focused on in-game activities and forum-based discussions. During these periods, we collect data on the emergence and development in the group of literacy practices that are an indelible part of progressing through *WoW* – for example, engaging in collective problem solving by debating the merits of one model versus another for specializing one’s virtual character using private, guild discussion forums; or seeking out and making sense of online networked resources (such as user-generated game manuals, information databases, wikis, etc.) in order to beat some in-game boss monster. During our monthly face-to-face sessions, however, we engage participants in game-related activities that are more structured (albeit still interest-driven) – for example, working on our guild web site where participants post text and images about their guild and character, link important information, and share online video fan movies about the game; or writing their own online fan fiction graphic novels from scratch. In our view, this partially designed community functions as an incubator (in place of a standard “treatment” in experimental design) providing a context that can cultivate and expand the burgeoning intellectual dispositions and skills of a population that has been increasingly dismissed as unruly, recalcitrant, and, to use Sax’s (2007) term, “adrift.”

Table I Literacy practices targeted in the after school incubator setting, a comparison of their habitat “in the wild” versus in our design lab, the text genre of each, and the literacy and technology standards each addresses

<i>Targeted literacy practice</i>	<i>Natural habitat</i>	<i>Incubator context</i>	<i>Text genre</i>	<i>Relevant standards^a</i>
Collective problem solving of game systems through discursive argumentation	<i>WoW</i> forum discussions	Private lab Forum and face-to-face discussions	Persuasive Procedural Transactional	NCTE 4, 5 11,12 ISTE 2a, 4
Researching, assembling, and synthesizing online multimodal game-related resources	Public user-generated online resource network	Public user-generated online resource network	Expository procedural	NCTE 7, 8 11, 12 ISTE 3,4
Designing, implementing and creating all materials for multimodal guild web site	Individual and guild web sites	Lab guild web site	Expository narrative	NCTE 5, 6, 8 11,12 ISTE 1b, 4
Creating multimodal fan fiction graphic novels		Digital and print individual graphic novels	Narrative	NCTE 5, 6 11, 12 ISTE 1b, 4

Note: ^a Relevant standards include the NCTE (2007), “Standards for English Language Arts” and ISTE (2007), “National educational technology standards”

Figure 1 Focus group conversation during a Saturday event on campus in the after school games based literacy program



Strategies for research

This after-school program serves a dual function as both a quasi-natural context for investigation of informal, interest driven learning and as a research lab for longitudinal and experimental investigations. As a quasi-natural context, it provides a context for the microgenetic study (Siegler and Crowley, 1991) of the emergence and development of game-related literacy practices over time. Through repeated assessments of participants' knowledge and understanding of key literacy practices related to gameplay and their attitudes and progress in the game versus at work, home, and school, we can trace the trajectories of learning (Greeno, 1998) of participants within such communities and how such literacy practices are situated in the everyday and offline lives of gamers. Doubling as research lab, it also provides a space for conducting design experiments (Brown, 1992) on the development, implementation and assessment of intentional learning activities based on commercial virtual worlds. Our goal is to move beyond documentation of the spontaneous literacy practices that emerge through unstructured online gameplay to the development and testing of causal models about what contextual features of online games (as both technology and social) foster them and which do not. Design experiments enable us to not only engineer instructional activities based on virtual worlds, but also empirically test claims as to the causal role of their native equivalents in learning more generally.

We use ethnographic methods for data collection (Hammersley and Atkinson, 1995) both within-game and face-to-face, including participant observation, multimodal field notes (both images and text), videotaped interactions, the collection of participant artifacts (e.g., problem-solving notes, written online texts), and repeated interviews with participants (McCracken, 1988; Spradley, 1979) about their attitudes and general progress in literacy related activities at work, home, and school (e.g. new interests in literacy related issues or topics, improvements in homework). In addition, for each instructional module designed, implemented, and revised throughout the after-school program, we collect both formative (ongoing ethnographic data) and summative assessment data, including both individual and group pretest/posttest comparisons. We then analyze the ethnographic data for individual and group trajectories of learning over time in terms of those literacies identified in Table I. Preliminary findings presented in the next section illustrate.

An example from the data corpus

The example discussed below is taken from our corpus of ethnographic data; specifically, in-game participant observation (chatlogging, in this case) of exchange between Dumptruck, a 15-year-old participant in the program, and Keerah, one of the doctoral researchers (both are pseudonyms). Dumptruck lives in a nearby rural community and describes himself as an average student but finds school to be, in his words, “totally pointless,” “extremely boring,” something “you *have* to do until you get to do what you *want* to do” (Dumptruck, entry interview, July 25, 2007). He has been raised in a home with a great deal of support for academics (especially for traditional literacies involving print text) and hopes to go to college to become a teacher and coach, but describes himself as someone who “doesn’t really like to read but will read a book if he *really* has to” (Dumptruck, entry interview, July 25, 2007). He acknowledges that his mother worries about his dislike for reading and recalls that his parents read to him frequently as a child and they made regular trips to the library (Dumptruck, entry interview, July 25, 2007). On one survey on attitudes toward writing, he responded that he *hates* to write and adds in handwriting on the side of his answer form “writing = work = not fun” (Dumptruck, session evaluation survey, February 16, 2008).

The excerpt that follows is part of a larger microgenetic study (Siegler and Crowley, 1991) of the emergence and development of Dumptruck’s game-related literacy practices over time. In this exchange, Dumptruck announces a new plan he has to “respec” his character (to change the statistical composition of his character’s abilities using an in-game complex system called the “talent tree”) in guild chat within the game. Keerah prompts him to elaborate on his decision, which initiates a discussion of his strategies for using online multimodal texts as a tool for successful gameplay. (Note: italics formatting is added to highlight key points discussed below.)

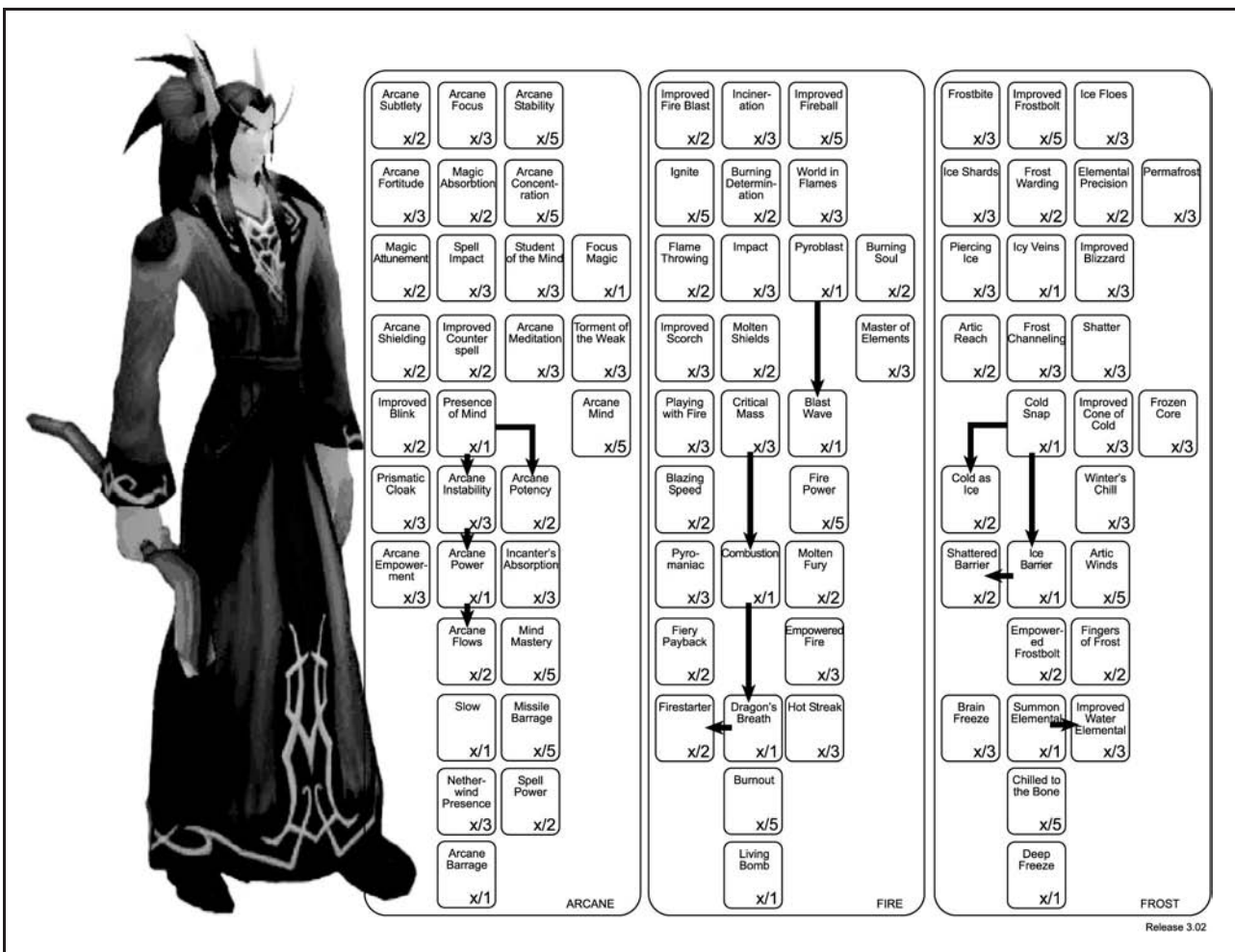
- 1 Dumptruck: i think *I'm gunna respeck to all frost*
- 2 Keerah: why's that? just asking . . .
- 3 Dumptruck: cuz i feel it better to be 100 percent something
- 4 cuz the stats are way better
- 5 Keerah: what statz are better?
- 6 Dumptruck: 100 percent crit increase
- 7 Keerah: ah. how are you figuring out all this stuff?
- 8 Dumptruck: *WoWhead stat thing*
- 9 Keerah: did you look it up?
- 10 Dumptruck: and *i was inspecting other mages in org* [Orgrimmar, an in-game city]
- 11 Keerah: *WoW* – how did looking at other mages help you figure that out?
- 12 Keerah: it's awesome – you gotta tell me!
- 13 Dumptruck: the talent thing when u inspect
- 14 Keerah: yeah - and it told you what?
- 15 Dumptruck: there pvp and talent and gear bracket
- 16 Dumptruck: the talent tree they chose
- 17 Keerah: but that just tells you what they have,
- 18 how did you know it was good?
- 19 Dumptruck: u read what the talent gives them
- 20 Keerah: and some of the ones you inspected had the features you wanted?
- 21 Dumptruck: like if u spend 1 talent of a 5 talent move
- 22 it only 1/5 as good as spending all 5 in it
- 23 Keerah: but how do you know it's a good place to spend all five?
- 24 Keerah: (have 4 points to spend right now because I can't decide)
- 25 Dumptruck: *on WoWhead there a talent tree to spend talents*
- 26 *so u don't waste yours and have to pay g's* [gold, the in-game currency]
- 27 Dumptruck: and it free
- 28 Keerah: is it like a model that you can play with then?
- 29 Dumptruck: yup
- 30 Dumptruck: i wouldn't survive without *WoW* head
- 31 Keerah: how the heck did you find that - all i've used is
- 32 the worldofwarcraft.com site
- 33 Dumptruck: we talked about it in class and with KJ [pseudonym]
- 34 Dumptruck: *WoWhead is my lil baby*
(chatlog, 08.01.21.BK).

Literacy as a tool for solving problems

Literacy, in the context of games, functions as a tool for solving problems; to borrow a phrase from Squire (2005), it becomes a “cheat” for the game. In this excerpt, the problem that motivates Dumptruck’s literacy work is the problem of optimizing one’s online character or “avatar.” As you progress through *WoW*, you are given increasing ability to customize your avatar using the talent tree (see Figure 2 for the talent tree for the mage class to which Dumptruck belongs). By means of this complex system, players allocate “talent points” toward customizing their character’s functions and abilities. In working through the system, participants are faced with the challenge of finding the best-fit solution to a problem of limited resources (talent points) for distribution across multiple variables, each with their own mathematical relationship to underlying avatar characteristics (e.g., hit points, mana points, regeneration speed).

Because *WoW* is a complex system with no single obvious solution, a significant amount of time is spent in multimodal expository text resources, on forum discussion boards, and in social interaction within the game assessing how choices in one area of the talent tree affect outcomes elsewhere and debating which point allocations are best given various play styles and goals (see Steinkuehler and Duncan (2009) for an analysis of the quality of scientific reasoning involved in these activities). At the very opening of this excerpt (lines 1-6), we see that Dumptruck’s literacy activity is motivated by and situated within these core community values and practices. Dumptruck states that he is considering revising his talent tree (“I think

Figure 2 Talent tree for the mage character class in *WoW*



I'm gunna respect to all frost," line 1) and then gives his rationale: because he wants to maximize the "critical damage" boost he can get if he reinvests all his points in one place rather than spreading them across several the tree more or less equally ("cuz i feel it better to be 100 percent something/cuz the stats are way better/100 percent crit increase," lines 3-4, 6). Thus, the literacy practices that follow in this conversational excerpt arise out of the need to solve an immediate problem, one defined by a mismatch between where he currently is and his goal. A reluctant reader in other contexts, in this context Dumptruck is motivated to see out, coordinate, and marshal online text resources not because a teacher or parent requires it of him or because "he really has to" (Dumptruck, interview 07.25.07) based on someone else's demands but for his own intentions, as a means to achieve in the game.

Researching and assembling online multimodal game-related resources

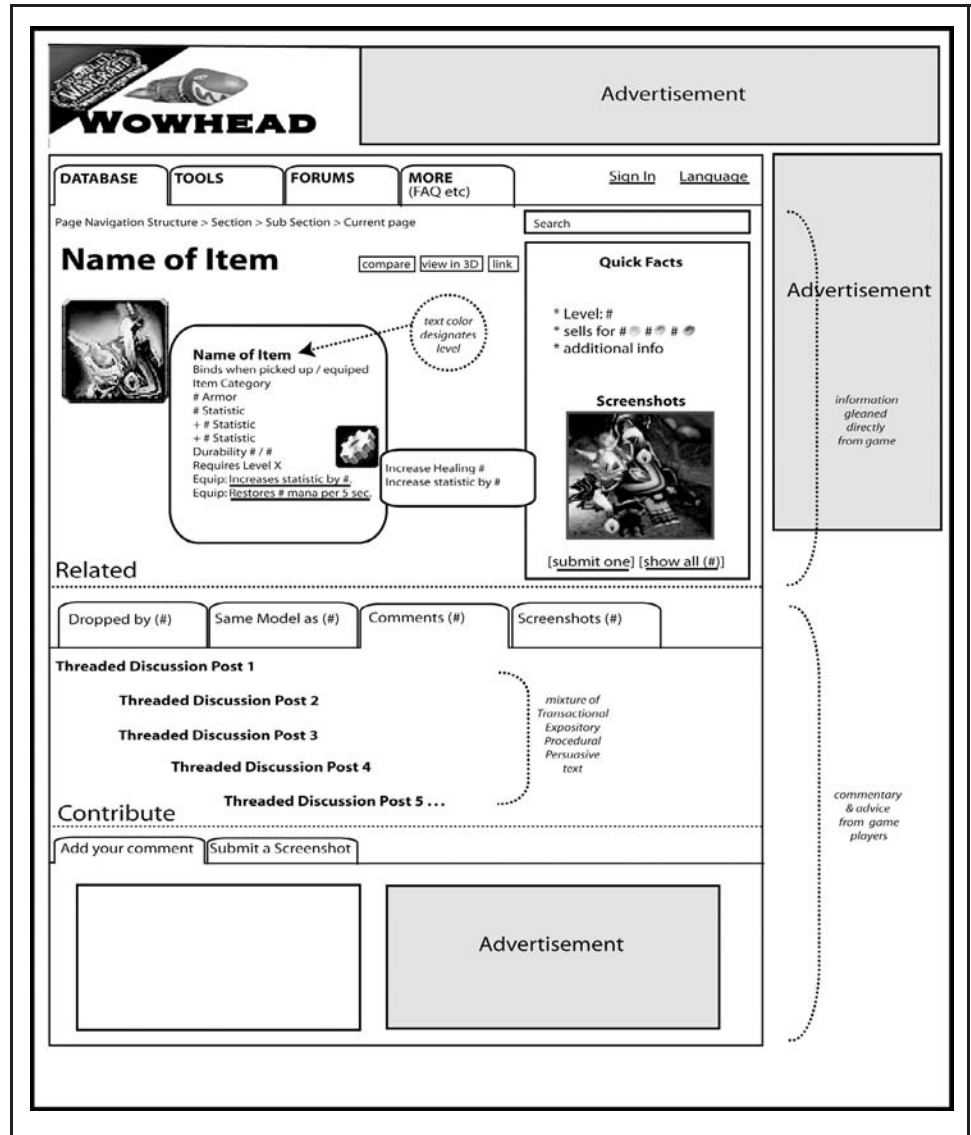
For every commercially successful game on the market there is a dense network of online multimodal, text-based resources created by and for the game community. *WoW* is certainly no exception. As a player progresses through the game, this dense network of online resources becomes an increasingly important tool for in-game success; yet, finding the information one needs within this "constellation of literacy artifacts" (Steinkuehler, 2007) is non-trivial. The results of a few simple Google searches on *WoW*-specific terms are shown in Table II. Even searching on the fairly specified string "*WoW* mage talent tree advice crit rate," one still gets 3,640 pages as a result. Thus, investigating *WoW* information sources and materials to leverage toward in-game solutions requires some facility with researching and finding online information. Google is a big help, but only if one has a decent strategy for using it.

In this exchange, Dumptruck details his strategy for solving the problem of how to "respec" his avatar after an additional query from the staff member, citing the *WoW*head talent calculator as his primary resource ("*WoW*head stat thing," line 8) and observation of the choices other players of the same class in the game have made ("inspecting other mages in org," line 10). The first resource cited – www.WoWhead.com/ – is a community created and maintained database-backed web site with integrated discussion forums (see Figure 3). Information featured in the database is collected either through user submission or, more commonly, through the *WoW*head Client – a *WoW* "mod" (short for "modification) or "addon," which is a piece of software players can freely download to their computers which collects data on the game as its played. As a resource, *WoW*head is dense and complicated, including images, icons, hyperlinks, and multiple forms of expository, procedural, transactional, and persuasive text. A quick test of the reading level (SMOG test, McLaughlin, 1969) of a small sample of pages reveals that the text is written at the 10.59 grade level, placing is somewhere between *Newsweek* (grade 10) and *Sports Illustrated* (grade 11). Such databases rely on a highly specialized language (e.g., "respect," "frost," "crit,") associated with the game in order to effectively and efficiently communicate information within the community (Commeyras, in press; Gee, 2004). Nearly, 16 per cent of the *WoW*head sample analyzed consists of such game specific terminology; another 3 per cent consists of words (e.g., "compensation," "implication," "obtainable") considered common only in academic contexts (Laufer and Nation, 1995). In order for Dumptruck to leverage such resources as a means toward his chosen goal, then, he must minimally read text at the high school level and comprehend not only the specialized language of *WoW*, but also, to some small extent, academics.

Table II Number of Google hits for six progressively specific searches related to the *WoW* topic investigated by Dumptruck, our research participant

<i>Google search term</i>	<i>Number of hits</i>
<i>WoW</i> game	13,000,000
<i>WoW</i> mage	457,000
<i>WoW</i> mage talents	309,000
<i>WoW</i> mage talent tree	112,000
<i>WoW</i> mage talent tree advice	12,100
<i>WoW</i> mage talent tree advice crit rate	3,640

Figure 3 Schematic diagram of a sample page from the *WoWhead* online resource highlighting multimodality, text genres, and information sources



Beginning in line 10, Dumptruck then reveals his second source of information: the completed talent trees (called “talent builds”) of other players in the same class within the in-game city of Orgrimmar (“and i was inspecting other mages in org/the talent thing when u inspect/there pvp and talent and gear bracket/the talent tree they chose” (lines 10, 13, 15-16). Essentially, Dumptruck uses the choices of other players, detailed in their character profiles that can be accessed within the game, as “worked examples” (Chi *et al.*, 1989; Renkyl *et al.*, 1998) of how the talent tree might be used in various ways depending on kinds of gameplay one chooses to emphasize (player versus player or “pvp,” raiding, etc.). Thus, Dumptruck arrives at two vital sources of information that can be used to solve the problem that frames this entire example (i.e. how to best specialize his character):

1. a posted model on *WoWhead* that can be used to calculate what the effects of choices in one area of the talent tree mean for outputs in other areas, and
2. a series of worked examples to use as fodder for decision making.

Synthesizing in-game and out-of-game information

Imagine a student attempting to solve a geometry problem using dynamic materials that allow manipulation of interaction variables (a protractor, ruler, and paper) and examples of successful (or not so successful) solutions in the past. Dumptruck's strategy is precisely parallel. Rather than solving a geometry problem in class, however, he is solving a multiple variable model within an online game. In order to draw valid conclusions as to which "respeck" (line 1) best suits his own in-game goals, Dumptruck must synthesize information from within the game (i.e. the talent builds of other players) with information gleaned from interactive tools found outside the game (i.e. the talent calculator found on *WoWhead*). In lines 17-18, Keerah queries Dumptruck's strategy for arriving at a solution, asking him to specify the basis on which he is making judgments as to the quality or "fitness" of any given worked example found in-game as embodied other characters ("but that [inspecting other players' characters] just tells you what they have/how did you know it was good?" lines 17-18). Dumptruck responds not with additional in-game observations he has made but with a reference back to the variable outputs of the out-of-game *WoWhead* model ("like if u spend 1 talent of a 5 talent move/it only 1/5 as good as spending all 5 in it," lines 21-2). Dumptruck use the interactive model in *WoWhead* to watch the accumulated outcome of choices made by other mages, allowing him to see the results of building out the tree in different ways and thereby tacitly the motivations of other mages in the game. This tactic lets him troubleshoot his own ideas before implementing them on his own avatar where the cost (in virtual gold) of revision increases each time ("on *WoWhead* there a talent tree to spend talents/so u don't waste yours and have to pay g's," lines 25-6).

Networked apprenticeship and the function of virtual worlds as levelers

Toward the end of the exchange, Keerah asks Dumptruck how he discovered *WoWhead* when all she was able to find was www.worldofwarcraft.com, the web site provided by the game company itself (lines 31-2). Dumptruck responds that he knows about it from discussions in the after school program ("class") and with KJ (pseudonym), another participant in the program (line 33). "*WoWhead*," he concludes, "is my lil baby" (line 34). Two final points here bear consideration. First, note the peer-to-peer learning within the emerging community of our program. Dumptruck found out about *WoWhead* not from staff-provided materials but from another participant. Second, the expected status hierarchy (teacher on top, student on bottom) is, in this moment, inverted. Keerah, as a doctoral researcher in the program, should ostensibly play the position of "teacher," yet in this interaction, like others, such relationships of status are inverted or otherwise disrupted by the nature of virtual worlds and their function as "levelers":

... much like the world of sport (Huizenga, 1949), the boundary of the game world creates a sense of moratorium from everyday roles (Meyrowitz, 1985). This sense of moratorium from stratified daily social life enables MMOs to function as kind of level playing field and, in part, may explain some of their popular appeal (Steinkuehler and Williams, 2006, p. 7).

Although Keerah has out-of-game authority, within the game (and related content) she is on equal standing with everyone else. This does not mean that she is never in the position of teacher but rather that she is in that position as often and under the same circumstances as everyone else in the program, regardless of age, income, or education level – when her knowledge and skills make her, at least for that situated interaction, the relative expert. Together, peer mentoring and inverted status hierarchies enable what we call distributed apprenticeship, "... a mechanism for learning crucial to success ... through which individuals enculturate one another into routine and valued practices and perspectives" (Steinkuehler, 2008, p. 12). Such apprenticeship happens in all directions across the social network of players. The discussion excerpted above illustrates apprenticeship in one direction (participant to doctoral student); other excerpts would illustrate instruction traversing the network in equally compelling yet radically diverse directions.

Some preliminary conclusions

In this article, we have tried to make a case for the idea that productive communities can be homegrown around online games in “third place” contexts such as after school programs. What we want is a “borderland discourse” (Gee, 1999) – a blend or mix of academic discourse and gamer discourse with neither subsumed under the other. By leveraging boys’ existing interests in games to strengthen and enrich their engagement in literacies with payoff in schools and beyond, we hope to revitalize the role of literacy (albeit digital literacy) in the lives of the chronically disengaged. Games are particularly good fodder for incubating such practices because, in the communities that develop around them, mastery is collective (Levy, 1999; Jenkins, 2006; Steinkuehler and Duncan, 2009), reciprocally bestowed (Steinkuehler, 2004), and – most importantly, especially by comparison with typical high school culture – tied to social capital, communally valued, and strongly encouraged (Steinkuehler, 2006b). In the case of Dumptruck presented in this essay, crucial literacy practices such as researching, assembling, and synthesizing information from online multimodal texts (NCTE Literacy Standards 7, 8, 11, 12; ISTE Technology Standards 3, 4) become tools for solving problems defined by his own goals and with cache among his own peer group (and not just with authorities over him such as teachers and parents). Literacy, then, is recontextualized as part of the everyday lives of boys on their own terms.

Such re-contextualizations can have a kind of ripple effect. When Dumptruck began our program, his family shared one computer (among three siblings and two adults) that could not keep up with his increasing demand. Although he was able to use it to type school assignments, for example, he was not able to access the internet on a consistent basis and described himself as not nearly as computer savvy as some of his classmates (Dumptruck, entry interview, July 25, 2007). A few months after joining the program, he and his father worked together to restore their home computer to working condition to support his gaming and, as his commitment to the program increased, they decided to invest in a much-needed upgrade. Dumptruck’s increased screen time was in part due to his gaming, but was also in part due to an overall increased facility with finding cool resources related to the game and his other long-standing interests. Such stories are anecdotal, but they do suggest that digital technologies are simply reorganizing literacy practices, surely not somehow replacing them.

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Corresponding author

Constance Steinkuehler can be contacted at: Steinkuehler@wisc.edu

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