Game Lessons: Using Zork to Show Students What Computers Teach

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Overview

Video games teach players how to do things and train them to fulfill specific roles in society (see Bogost 2007, 233ff, for one process by which this teaching and training may transpire). This logic has deep roots in the philosophy of games and play. Play "does not teach facts, but rather develops aptitudes" (Caillois 2011, 167) and it "constitutes a training of the young creature for the serious work that life will demand later on" (Huizinga 1949, 2). Thinking of games in terms of the work they perform to shape the abilities and mindsets of their players offers a starting point for thinking in nuanced ways about various forms of media and technology.

This short lesson plan incorporates a reading from a current game studies scholar (Kocurek 2012) with in-class play that enables students to feel the ways a vintage computer game, *Zork*, taught early 1980s players to use a command line environment and trained them for a workplace that increasingly demanded pre-GUI computer literacy. Although many contemporary undergraduate students are familiar with computer games, they may not have had opportunities to reflect on the formal and economic histories of games as forms of cultural production and may not have considered their educational dimensions. By "educational" I do not necessarily refer to classroom instruction, but rather to the ways that gameplay acts as a site of teaching and learning in both formal and informal settings, or "any situation in which knowledge is being acquired or shared across a person's lifespan" (Ferdig 2014, 317).

This lesson is intended to be part of a first course in the study of digital media and culture, not a specialized course in game studies. The payoff lies in providing materials to students that allow them to understand games not only as forms of entertainment, but also as complex cultural objects. In this way, this lesson both contributes to the goals of an introductory course in new media, specifically those that seek to highlight the social, political, and cultural dimensions of media, and provides initial grounding for further study of games. An important part of the pedagogical work here lies simply in teaching the idea that a game is something that can be studied and learned from and that games are valid and significant forms of cultural production— these concepts are often not self-evident to students in undergraduate programs.

Structurally, the lesson begins by offering students a reading by Carly Kocurek, a game studies scholar. This reading, written in an accessible but rigorous academic style, implicitly legitimizes the notion that computer games are worthy objects of a study. It establishes a focus on a moment in social, computer, economic, and gaming history that is situated in most current college students' parents' lifetimes, but not in their own: the late 1970s and early 1980s. It also offers a framework for an argument about the social and intellectual work that games can perform. The lesson offers students the opportunity to unpack this argument, apply it to a period game, and then trace ways that it operates in the contemporary media environment.

Rationale

Zork is a "computerized fantasy simulation game" (Lebling et al. 1979) where players must navigate a mock-adventure world located in, around, and below a white house with a boarded

front door, a small mailbox, and a rubber mat. That *Zork* "was designed to run under hardware and software that were by early twenty-first century standards much constrained" (Harpold 2007), the circumstances of gameplay can be productively disorienting for undergraduates. Specifically, the game poses a challenge because it has a real geography, but it is rendered entirely in text. *Zork* demands that the player construct a mental map of the gamespace based on textual feedback that describes things in relation to one another: the field is west of the house, the elongated brown sack is on the table, the trap door is under the rug. The game demands that the player master a limited vocabulary and syntax: the game's help file informs players that they "are dealing with a fairly stupid parser." Players must learn quickly to "go" "north" or "down"; to "take" things; to "attack" trolls. Regarded as a classic of the interactive fiction genre, *Zork* has received attention from a number of scholars (Murray 1997, 74-82; Montfort 2003, 95-117)

In its form, *Zork* resembles the command-line interface that was being integrated into U.S. workplaces in the late 1970s and early '80s. Command-line interfaces dominated computing from the mainframe days of the 1960s through the MS-DOS era into which *Zork* players were born. Command-line users tend to perceive a distance from the machines they operate. Neal Stephenson (1999) plotted out this distance in reminiscing about his high school experiences with computing. Steps included working out programming commands at a desk at home with a pencil and paper; going from home to school to type up the handwritten notes on a machine that translated the code to punch tape; feeding the tape into a reader, which converted the punched holes into beeps that could be sent by modem to a mainframe, which in turn processed the commands and sent a reply back through the modem (p. 11). With the introduction of consumer-grade display monitors and personal computers, teletype[1] and punch cards faded from view, but the command-line interface remained, transplanted from printouts to screens.

The computing interfaces that our students and we know best exhibit characteristics of direct manipulation, where users perceive that their actions have a direct correlation with changes in a computing environment (see Frohlich, 1993). Ben Shneiderman (1983), who coined the term "direct manipulation," offers the example of the automobile to illustrate the concept: "To turn to the left, simply rotate the steering wheel to the left. The response is immediate, and the changing scene provides feedback to refine the turn" (p. 62). It was not until the arrival of the consumer-grade graphical-user interface in the mid-1980s and its 1990s normalization that such direct manipulation interfaces pushed the command line from public view. Today's undergraduate students, if they are familiar with command line interfaces at all, imagine them as being a space "under the hood," intelligible only to those with specialized programming skills.

Media presentism (see Livingstone 2002, 34) offers a major challenge in teaching new media to undergraduates. Providing access to the possibilities and limitations specific to previous media moments allows them to recognize and see beyond the present-day conditions that they might take for granted. This challenge is especially pronounced in institutions with limited budgets and infrastructure insufficient to support a media archaeology collection. This lesson plan overcomes that obstacle primarily by use of a web-based *Zork* emulator that reproduces text-based gameplay suitably enough to render the experience unfamiliar.

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1. On teletype, see Purdon, 2016

Students read Carly Kocurek's (2012) "Coin-Drop Capitalism," which positions the late-1970s/early-1980s video game arcade as the site where a generation of teens destined for the emergent American white-collar service economy first encountered computers (pp. 204, 206). Players "were not only playing but learning the cultural and economic values that would allow them to survive and thrive in a de-industrializing work environment" (Kocurek 2012, 205). Kocurek (2012) argues that these arcades and the games they contained taught young people to manage money, follow rules, and use computers. That is, the games taught them skills that they would need to master in order to succeed in the service-sector jobs that many of them would soon take up (pp. 202-04).

By staging a pedagogical encounter with *Zork*, and engaging in discussion and brief writing exercises triggered by that play, students can:

- Learn how different media objects teach users to perform specific tasks and contribute to training them to fulfill specific roles in society
- Apply this logic to a range of media and technological objects
- Gain some sense of what text-based gameplay and general computer use consisted in the moment when the discretionary use of computing machinery first arrived in homes and workplaces (Grudin 2017, chap. 7)
- Become aware that the directly manipulated, touch- and mouse-driven GUI computing interfaces with which they are familiar are historical artifacts

General Timeline

This lesson is designed to cover two 80-minute class meetings, preferably in the same week. The first class meeting unpacks Kocurek's "Coin-Drop Capitalism" and invites students to practice applying elements of Kocurek's argument about the lessons taught by late-1970s/early-1980s video game arcades to other objects. The second class meeting focuses primarily on a single media object, an emulated version of the early-1980s computer game *Zork*. Students play and work with *Zork* in order to apply Kocurek's argument and learn about the introduction of computers (and computer skills) to the post-industrial workplace (and the post-industrial workforce). The lesson ends with a short reflection exercise.

Detailed Lesson Plan

Day 1: Kocurek reading and historical context

Context

The first day's work is designed to set up the second day's hands-on engagement with *Zork* and subsequent reflection exercise on the lessons media teach

Before class

Students read "Coin-Drop Capitalism," and respond to three questions on a Learning Management System forum:

1. What things does the author say that video games taught young people to do?

2. As young people learned to do these things, what were they being trained to become?
3. Can you think of another practice or object (possibly a media practice or object, broadly understood) that trains people to become something? What is it, and what does it train people to become?

My usual practice is to configure the forum such that students must submit their own responses to the questions before seeing others' responses.

The first two questions focus students' reading on key points in the text: Kocurek argues that late-1970s/early-1980s video arcades taught young people to manage money, follow rules, and use computers, in order to train them to become post-industrial knowledge workers in a moment of structural change in the United States.

The third question asks students to think beyond the author's object of analysis and make a first attempt at abstracting the argument to other forms of media. This question intentionally omits the intermediate step in Kocurek's argument—part of the in-class work is to develop argumentation skills by tracing the steps in the reading and then porting the logic back into students' own responses. Some illustrative student responses I've received to this question include: dolls, which train children to fulfill gender and class expectations; schoolroom rules, which train students to respect authority.

In class

1. *Warm-up/check-in:* At the start of the class meeting, students are grouped in triads and warm up by sharing responses from forum posts. Students are instructed to explain in detail to one another their responses to the third question: what is the object they've chosen, and how does it train people to become something? Each triad is to choose one of these objects to be shared—they are instructed to choose the example that best applies the argument in Kocurek's text. During this part of class, the instructor circulates to keep groups focused and to get a sense of what will be shared with class in subsequent steps of the lesson.

2. *Sentence Commitment:* After a few minutes, pairs go to boards to write a single sentence using the form: "A(n) [*object*] trains people to become [*role(s)*]." By writing this sentence in public, each group commits to the possibility of having to present an idea-in-progress to peers.

3. *Full-group discussion:* instructor selects a few of the sentences on the board, asks groups to expand. Push for greater detail: *how* does the media object train people to do this thing? *what steps* does it guide its users through? *what tasks* does it teach the user to complete along the way? is it *effective*? The goal in this step is to help students think through the steps that would be needed to make a claim *similar* to the one from the Kocurek reading.

4. *Core argument:* From this discussion, pivot to a rehearsal of the core argument from Kocurek: late-1970s/early-1980s video arcades taught young people to manage money, follow rules, and use computers in an effort to train them to become post-industrial knowledge workers in a moment of structural change in the United States. Students

should now have a clear sense of how this argument works, which allows the class meeting to land on how media function in historically- and culturally-specific circumstances.

5. *Kicker:* Kocurek not only provides a template for an argument about how media can train people for specific social roles, she also shows how media have histories. Ask how the video game world students read about in Kocurek differs from the video game world they may know from their own experiences. Time permitting, it may be useful briefly to screen part of Patrick Scott Patterson's (2012) "The Ultimate Early 80s Arcade Tribute," a YouTube video featuring edited footage of period video arcades. Ask students what differences they see. End class with a teaser: next time, we'll play an old game, and we'll get the chance to access some sense of what this late-'70s/early-'80s moment felt like.

Day 2: *Zork* Day

This day's work stages an encounter with a simulated version of *Zork*. Students work in teams to explore the gameworld, and are prompted to apply the Kocurek argument studied on Day 1 of the lesson to the game.

Cold open

When students arrive in class, use the data projector to show the start screen of *Zork* simulator. I suggest using the "full-screen" functionality of the browser so that there is nothing visible except for *Zork*. Access the *Zork* simulator through the Interactive Fiction Database's web-based Parchment interpreter at http://iplayif.com/?story=http%3A%2F%2Fwww.ifarchive.org%2Fif-archive%2Fgames%2Fzcode%2Fzdungeon.z5 (or, for simplicity's sake, use the shortened link I've created at http://tinyurl.com/zorkzork).

Tell students that this is *Zork*, and ask them what to do next. There will likely be some uncomfortable silence, but allow it to break when someone offers a suggestion. Type *exactly* what the students say. Offer only minimal feedback in order to allow the group space to experiment, and to set the tone for what will follow: exploration and experimentation. Allow 3-5 student suggestions, then tell the students you're going to set them loose in *Zork*.

Group play

Form groups of three students. Instruct students to take out phones/tablets/laptops and browse to http://tinyurl.com/zorkzork. (One device per group is sufficient.) The mission is to see how far they can get, and to pay close attention to what tasks and/or skills the game pushes them to master. Reserve a solid block of time for students to explore and experiment: in an 80-minute class meeting, I generally protect at least 20 minutes for this. While groups are playing, circulate to check in, offer words of encouragement, and probe what students think they are being taught by the game.

Intermission

After students have had a chance to explore *Zork*, ask groups to report briefly to the class. Where did you end up? What happened? What did you find?

Group reflection

Instruct groups to discuss what *Zork* taught them by considering the tasks or skills *Zork* forced them to master. Tell groups to be ready to report back to class.

Students often report that *Zork* taught them to use a restricted vocabulary (the game recognizes fewer than 1,000 words) and a simple syntax. Sometimes, groups will report that the game taught them to navigate a space without visual cues: they need to find their way through a physical space using only a textual interface. Other responses are possible, or indeed likely.

Command prompts

On main screen, either project an image of a DOS or similar prompt or open a command line application (such as Terminal in macOS). Ask if students know what you're showing them, and if any do, ask them to explain. The important point is that a command-line interface was the primary mode of interacting with workplace computers in the era when *Zork* was produced. Such environments had limited vocabularies and strict syntaxes. Through discussion, move students to the notion that, through gameplay, *Zork* taught students to use small vocabularies and strictly-structured syntaxes and trained them to become future office computer users familiar with the logic of command-prompt interfaces.

Expanding the logic

At this point in the class, I usually find it helpful to provide examples of other media forms to which the logic can be applied. As students have by now had 1½ class sessions to work with this idea, they can be challenged to offer explanations, and then the instructor can backstop them.

As I use the lesson described here as part of a first course in the study of media and culture, I often use at least one example that is decidedly low-tech: an interdepartmental mail envelope, which teaches workers to communicate through paper documents; to entrust the delivery of these documents to other workers; and, due to the holes punched in the envelope and the temporary closure mechanism, not to imagine that ordinary work-related documents transmitted in the normal course of business are afforded high levels of confidentiality from colleagues.

Other possible examples include:

- Index cards or flash cards, which teach students to organize knowledge into discrete units that can be reorganized at will, preparing them to become knowledge workers—this is a recognizable experience with deep roots in the history of card catalogs and information (see Krajewski 2011).
- Social media profiles, which teach people to craft and maintain personal brands, training them to become fully-formed neoliberal subjects (see Gershon 2017)
- The Fitbit, which teaches people to strive for standardized notions of healthiness and healthy behavior, training them to quantify their lives and match their performance in work and non-work time to metrics (see Couldry and van Dijck 2015; Whitson 2014)

Reflective in-class writing assignment

To lock in learning, at the end of the session, ask students to take 5 minutes and write a short paragraph in response to the following prompt (projected on screen):

> We've spent the week studying the ways media objects 1) *teach people to do things* and 2) *train them to fulfill specific roles* in society. Write one short paragraph that summarizes how this logic can be applied to one of the following objects, or to an object of your own choosing:
>
> - Facebook's Like button
> - Lego blocks
> - Homework

(The list above can be expanded and amended as needed.)

I typically collect students' paragraphs and read them, but tell students up-front that the writing assignment is low-stakes. I will offer brief comments, and count the completion of the paragraphs toward the course's participation grade, but not assign a formal evaluative grade.

Depending on the specific goals of the course into which this lesson is integrated, this short writing assignment can act as scaffolding for a mid-length (2-3 pp.) reflection paper, possibly due the following week; a major assignment (I often integrate the lesson into a 7-week section of a course that culminates in an analysis of one media platform); or one part of a learning portfolio.

Teaching materials

Reading

Kocurek, Carly. "Coin-Drop Capitalism: Economic Lessons from the Video Game Arcade." In *Before the Crash*, edited by Mark J. P. Wolf, 189-208. Detroit: Wayne State University Press, 2012.

In-class resources

Zork emulator, maintained at the Interactive Fiction Database: at http://iplayif.com/?story=http%3A%2F%2Fwww.ifarchive.org%2Fif-archive%2Fgames%2Fzcode%2Fzdungeon.z5 (or http://tinyurl.com/zorkzork).

Footage from period video arcades: Patterson, Patrick Scott. "The Ultimate Early 80s Arcade Tribute." YouTube. Last modified June 23, 2012. Accessed June 27, 2017. https://youtu.be/nWevidSFyjY

A learning management system with forum or discussion board capability

A classroom equipped with a data projector to show images, video, and game to entire class.

A subset of students is relied upon to provide laptops, tablets, and/or smartphones to play *Zork* (it is typically the case that some portion of any group of undergraduates will have this equipment ready-to-hand during class).

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Biography

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Scott Kushner is an Assistant Professor of Communication Studies at the University of Rhode Island. His work has appeared in venues including *New Media & Society*, *First Monday*, and *The Communication Review*. Current projects include a cultural history of ticketing and a reconsideration of lurking in social media.