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Gaming the Gilded Age

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My students gather their things and leave the classroom, some arguing about the computer game they just finished. Others who had my class the year before walk in and, seeing the computers and the game boxes still on tables, begin the kind of dialogue any teacher wants to hear: "Oh, *Railroad Tycoon 3*, I remember that! Our company's chairperson was removed after we sold all of that stock...." They then remember, in detail, how they created a Gilded Age era railroad company and either ran it successfully...or ran it into the ground. They remember in detail because they didn't just learn about railroads during the Gilded Age, they lived them. In creating and managing their own Gilded Age era railroad companies over four class periods in the 3-D video game simulation *Railroad Tycoon 3*, my students went beyond the text and engaged in experiential learning of Gilded Age business practices and addressed recent arguments made by a leading historical scholar, historian Richard White, who describes the centrality of corruption in the railroad's development.[1] Asking secondary students to read White's essay in the *Journal of American History* would have been a stretch, but learning the argument through a game was not. *Railroad Tycoon 3* immerses students, frustrates them, and by the end tempts them to break the game's rules to further their corporate interests, merging nicely with the argument White offers.

This game-based learning approach is particularly suitable for students who are, in the words of Marc Prensky, "digital natives" and who, thanks to years of exposure to new technologies, actually think differently than students of the past.[2] The use of games as effective teaching tools has received increased attention in the past years.[3] UW-Madison's David Williamson Shaffer has argued for the use of video games in teaching, and the Muzzy Lane company has designed detailed, in-depth video games for humanities and the sciences.[4] More recently, Jane McGonigal has argued that games can be used to improve society.[5] At the college level, the role-playing "elaborate games" of *Reacting to the Past*, started at Barnard College, have evolved into a consortium of forty colleges and universities that use such games, designed by scholars, to address a variety of historical topics.[6] The game *Roller Coaster Tycoon*, has been successfully used in British classrooms, where instructors noticed how well playing it taught group work.[7]

Railroad Tycoon 3 is one of a series of simulation games designed by the video game creator Sid Meier, and was distributed by PopTop, retailing for about $18-35 for both PCs and Macs. The third incarnation of the game (still available for purchase online, where I bought it) allows players to start a railroad business in the U.S. or abroad at different

periods in time and then attempt to make it as successful as possible.[8] In *Railroad Tycoon*, players issue stocks and bonds, purchase needed equipment, scout terrain to see what markets have surplus and deficits in types of products, lay track, and transport goods. As their businesses grow, players can also build towns around rail lines and expand their empires. The game is what Prensky calls a "complex" game, and what Shaffer calls an "epistemic" game; it compels the user to employ higher-order thinking skills.[9] The game's ability to teach economic and business principles may seem obvious for use in an economics class, but it can also facilitate the learning of history. Thanks to its mulitple historical scenarios, students can build their railroads in the Gilded Age, competing against the likes of a simulated Jason "Jay" Gould, and learn about the United States in the mid-to-late 19th century firsthand.

Prior to using the game, I went over the Gilded Age with students via lecture and discussion. They became familiarized with the rise of industry, the emergence of business titans, urbanization, immigration, and Mark Twain's labeling of the era. I've used board games such as Milton Bradley's WWII game *Axis and Allies* and Eagle Games' *The American Civil War* in the past, and found I had to set aside one class period just to hand out and go over each game's instructions. Fortunately, *Railroad Tycoon 3* has a built-in tutorial that familiarizes students with the basics quickly (ten minutes or so) and effectively.[10] It takes students (divided into groups of 3-4) step-by-step through the process of starting a company by investing amounts of personal capital and the money of others. Next, they use that money to build railroad stations, water, oil, and maintenance facilities, then lay track, purchase a train, and determine the cargo to be hauled. In this tutorial, students learn the game's interface, and the uses of the mouse/touchpad (depending on their computer) and keyboard. The second phase of the tutorial addresses buying and selling stocks and bonds, margin calls, and other business related matters. At each step of the tutorial the student is told the potential ramifications of a particular action like buying stock on margin. After both tutorials were finished, I asked that students use the "Sandbox" option for a few minutes just to play around and better familiarize themselves with how the game functions. When they were comfortable with this, the groups move on to actual play, during which they will come to understand the fundamentals of the railroad industry, and White's argument that "In the actual world of Gilded Age politics and business, financial and political corruption could not be separated."[11]

Railroad Tycoon 3 offers numerous scenarios, and students can play the "Central Pacific," "Germantown U.S.A." or "Texas Tea" ones that allow them to operate within the Gilded Age. When they create their company (they get to pick a name and logo) they also have to set the game for two additional computer players against whom they will compete. The computer will assign them competition in the likes of tycoon Jay Gould, and as the students play the game the computer will play these other two barons. The game's goal of making money in a successful business keeps them focused on the game itself, but the handout I provided to fill out as they go made sure they stayed focused on learning concepts, not just play. As they competed in the simulation, students had to answer questions I included on the handout such as:

"How should you decide what cargo to haul where?"

"What is the importance of outside investment to your company, and what problems may this bring?"

"What risks come with issuing bonds?"

"What is buying stock on margin? Why do it? What risks come with doing so?"

"Why is track grade significant?"

"What is the impact of your business on the environment?"

This handout was turned in as part of the student's business portfolio, a graded (by me) assessment that included screen captures of the team's ledger, a feature of the game where students can click a button and view stock data, their balance, see their credit rating, and other information about the company.

To figure out where to start laying track, the game allows students to scroll out and view the U.S. from thousands of feet up, or at ground level. Scrolling out helps them get the lay of the land (and learn a little geography), and then they have to determine what to haul where. By clicking a button, the map changes from a 3-D topographical one to a color-coded one showing what goods are produced in abundance, and where they are scarce. For example, they click on "lumber" and see green areas where it's rare and there is a high demand (and price) for it, and red and yellow areas where it's in abundance, and thus cheaper. Realizing that they need to take goods that are in quantity in one area and move them to an area desirous of them, they then have to determine the route they want to take, clicking back to the topographical map. Examining the land itself is necessary because, as students learn, taking their trains up steep inclines burns more fuel and oil, slows the train down, and could cost time and money. Prodded by my improvisational questioning as they played, they also made connections between their harvesting of raw materials, and their impact on the environment, and addressed counterfactual moments in the game vs. historical reality.

According to Prensky, "In a partnering pedagogy, using technology is the students' job. The teachers' job is to coach and guide the use of technology for effective learning," and that "the teacher is...the quality controller, not the user."[12] I circulated throughout the classroom, guiding students as they planned their next move, consulted the game's rulebooks as needed, and asked them questions about their decisions. Their interaction with the game provided much of the learning. In his book *Flow: The Psychology of Optimal Experience*, the psychologist Mihaly Csikszentmihalyi (pronounced "Chick-sent-me-high") defines an "optimal experience" as one in which "...Self-consciousness disappears, and the sense of time becomes distorted. An activity that produces such experiences is so gratifying

that people are willing to do it for its own sake, with little concern for what they will get out of it, even when it is difficult, or dangerous."[13] This is what I observed in students as they played *Railroad Tycoon 3* in class (and during lunch, when some students voluntarily came to my classroom to practice on designated school computers). And it wasn't just students who enjoyed games outside of school who embraced the assignment, nor was their a gender gap in learning. Male and female students, those who gamed recreationally and those who didn't, found some role in the group, and a level of engagement.[14]

One of the things they learned is that "newspapers" of the era, generated occasionally by the computer, could inform the world of their successes, or failures. Richard White notes that newspapers of the Gilded Age were difficult to control, and that railroad companies learned they had to try to regulate the production and distribution of information.[15] Students learned that when a newspaper reported their failures, or the advancements of their competitors, this could influence their stock prices and credit rating. Another frustration for players came in the form of intermittent computer updates telling them just how well the computer generated competition was doing.

With some further prodding by me, they also learned what the game doesn't do. For example, the plight of laborers and labor unions is not addressed at all. This omission was addressed in our next unit, when we discussed conditions for workers, the dangers of monopolies, attempts at labor reform in response to the actions of tycoons (such as the students themselves), the creation of the Knights of Labor and the American Federation of Labor, and figures like Eugene V. Debs.[16]

There were frustrations, too. Sometimes students accidentally layed track where they didn't mean to. Sometimes they found that their trains weren't moving, as they opted to ship a cargo out of an area where it wasn't in abundance, and had to wait for it to be delivered over long distance to their train. Others had a hard time trying to figure out why they lost money. This frustration was actually helpful in the learning experience. Psychologists have argued that some failure can actually be enjoyable to gamers, and can spur them to play on.[17] Failure drove some of my students to learn more about the railroad business.

This frustration then leads to White's point about railroad corruption in the Gilded Age. He argues that "The corruption of the 1870s did not add a single new route across North America," and that yet it was central to railroad development.[18] While *Railroad Tycoon 3* does not allow for bribery of politicians, the defrauding of the U.S. government, or the manipulation of information, the form of corruption that was available to students was a modern one: cheat codes. These are codes created by the game's designers, and hidden in the game. Well, "hidden" is the original intent; a quick Google search will reveal *Railroad Tycoon 3's* cheat codes in seconds. With these in hand, students can bend space and time, rack up huge profits with certain keystrokes, and otherwise bypass the rules of the game. This then forces them to make a decision (Do I cheat?) and then compare their dilemma to a real railroad tycoon of the era, who certainly had the

means to and, as White argues, did so. This topic alone generates quite a bit of conversation, and further allows students to experience the Gilded Age as a tycoon, this time at a moral crossroads.

By the end of the last class period, students have engaged in a truly experiential historical lesson. They have learned about the Gilded Age as a whole, now possess a basic economics vocabulary, and have "created" a railroad company. They have also learned how newspapers can affect their businesses. Lastly, they have examined the role of corrption in business of the period. They have learned all of this not by just reading about the Gilded Age railroad industry, but by taking part in a simulation of that engaging era.

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[1] Lendol Calder encourages college instructors to venture beyond textbooks in "Uncoverage: Toward a Signature Pedagogy for the History Survey," *Journal of American History* 92 (2006): 1358-1370; Richard White, "Information, Markets, and Corruption: Transcontinental Railroads in the Gilded Age," *Journal of American History* 90 (2003): 19-43. For his more expanded argument, see his book *Railroaded: The Transcontinentals and the Making of Modern America* (New York: Norton, 2011). Richard White is also a past president of the Organization of American Historians, Margaret Byrne Professor of American History at Stanford University, and the author of numerous works including *The Middle Ground: Indians, Empires, and Republics in the Great Lakes Region 1650-1815* (Cambridge: Cambridge University Press, 1991). His book "*It's Your Misfortune and None of My Own:" A History of the American West* (Norman, Oklahoma: The University of Oklahoma Press, 1993) is a valuable overview of western development. For economic development, see H.W. Brands, *American Colussus: The Triumph of Capitalism 1865-1900* (New York: Anchor, 2011), and Charles R. Morris, *The Tycoons: How Andrew Carnegie, John D. Rockefeller, Jay Gould, and J.P. Morgan Invented the American Supereconomy* (New York: Holt, 2006).

[2] See Marc Prensky, *Teaching Digital Natives: Partnering for Real Learning* (Thousand Oaks, CA: Corwin, 2010). See also Marc Prensky, *Digital Game-Based Learning* (New York: McGraw Hill 2001) for "Ten Ways the Games Generation is Different," 51-65. James Paul Gee notes his thoughts on the educational value of "Rise of Nations" based on his own play in his *Good Video Games + Good Learning* (New York: P. Lang, 2001).

[3] For an overview of the emerging body of literature about gaming and learning, see Goknur Kaplan Akilli, "Games and Simulations: A New Approach in Education?" in David Gibson, Clark Aldrich, and Marc Prensky, *Games and Simulations in Online Learning* (Hershey, PA: Information Science Publishers, 2007), 1-20.

[4] David Williamson Shaffer, *How Computer Games Help Children Learn* (New York: Palgrave MacMillan, 2006); Muzzy Lane, "Muzzy Lane" (Newburyport MA: Muzzy Lane, 2012), www.muzzylane.com.

[55] See Jane McGonigal, *Reality is Broken: Why Games Make Us Better and How They Can Change the World* (New York: Penguin Press, 2011).

[6] See Barnard College, "Reacting to the Past" (New York: Barnard College, 2012), www.barnard.edu/reacting/about/index.html

[7] Marc Prensky, *Don't Bother Me Mom, I'm Learning* (St. Paul, MN: Paragon House, 2006), 72.

[8] Some gamers actually prefer *Railroad Tycoon 2*, but the most recent version of the *Railroad Tycoon* line is *Sid Meier's Railroads*, released in 2006. This version may be more compatable for modern operating systems than the 2004 (for which you may need a patch), but I have not used it in class.

[9] Prensky, *Teaching Digital Natives* 57-58; Shaffer 4-12.

[10] For a lengthy online tutorial on the game, see YouTube, "Let's Play: Railroad Tycoon 3- Go West! -Part 1/3," (YouTube: 2012), www.youtube.com/watch?v=1ncm0FujRvU. The game also includes the option for students to play each other directly over a Local Area Network (LAN). This option failed to work on Macs in my classes for technical reasons, even with the help of my school's very skilled Technology Chair, who purchased one game for each school laptop (the license agreement that comes with the game stipulates no duplication, but also requires no fees) and assisted me during each class period on computer-related issues.

[11] White, 43.

[12] Prensky, *Teaching Digital Natives*, 3, 100.

[13] Mihaly Csiksaentmihalyi, *Flow: The Psychology of Optimal Experience* (New York: Harper Perennial Modern Classics, 2008), 71.

[14] For an investigation into females and games, see James Paul Gee and Elisabeth R. Hayes, *Women and Gaming: The Sims and 21ˢᵗ Century Learning* (New York: Hargrave Macmillan, 2010).

[15] White, 30-36.

[16] For a good examination of discussion-based teaching of history, see Lawrence A. Smith and Margaret Foley, "Partners in a Human Enterprise: Harkness Teaching in the History Classroom," *The History Teacher* 42 (2009): 477-496. While this lesson was created before the Occupy Movement, teachers may want to consider tying both game play and attempts at labor reform to modern corporations and the American economy today, and perhaps discuss the the problems that arise when tycoons cross-own other businesses. Comparisons of past tycoons and modern ones may prove educational as well. For middle-school teachers interested in a computer simulation that focuses on rank-and-file workers consider "Past/Present: 1906" in which players play as either a weaver or a middle manager at a factory in 1906. See The Center for New American Media, "Past Present" (New York: The Center for a New American Media, 2012), http://www.cnam.com/flash/index.html or Muzzy Lane "Past/Present" (Newburyport MA: Muzzy Lane, 2012) muzzylane.com/project/pastpresent.

[17] McGonigal, 64-67.

[18] White, 42-43.