

Using Civilization IV to Engage Students in World History Content

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How can teachers utilize video games in the classroom, harnessing a technology that is gaining “market share” in the lives of our students? This article will provide classroom teachers with a research-based rationale for using video games along with a viable, classroom-tested lesson to teach social studies content using a widely available commercial video game. Specifically, how to use the game *Civilization IV* in the classroom to allow world history high school students to explore the impact technology has on societal development and the human experience and their place in time. This correlates to NCSS Curriculum Standard II: time, continuity, and change and NCSS Curriculum Standard VIII: science, technology, and society.

Keywords: technology, world history, video games, simulation, *Civilization IV*

Newsflash! Students play video games! In fact, they are probably more interested in playing a video game than doing homework assignments, taking notes, or talking about social studies–related content with their peers. Video games have come a long way since they were first developed nearly fifty years ago. Now players are able to explore distant places from different times in highly detailed, realistic environments. They can lead the armies of ancient Rome in tactical battles against the barbarian hordes to save the empire. Video games even allow users to develop dynamic cityscapes, including infrastructure and policies preferences, to ensure simulated citizens are happy, prosperous, and safe. They are interesting, fast-paced, self-contained, and entertaining. How can we compete?

It seems that the video game phenomenon is situated within the broader context of American culture. The U.S. gaming industry had sales of almost \$12 billion in 2008 (Entertainment Software Association 2009) on 298.2 million units sold—nearly 20 percent higher than total U.S. cinema box office receipts for the same time period (*The Numbers* 2009). Industry research suggests that 43 percent of American households will buy a video game this year, with the average player of video games, called a “gamer” for short, being a thirty-five-year-old male. Nearly 25 percent of all gamers will be over fifty years old, and over 40 percent will be female. Astonishingly, nearly 70 percent of all Americans will play a video game this year; an all-time high (Entertainment Software Association, 2009).

Amanda Lenhart and others (2008) found that 97 percent of all American teenagers play video games and that nearly 50 percent played a video game within the last twenty-four hours. Clearly, the video game experience is penetrating all demographics in the United States and has become a mainstream part of the culture, especially within the secondary school age demographic. Moreover, games like *Civilization IV* are popular and have great sales records because great video games incorporate good learning principles, principles supported by current research in Cognitive Science (Gee 2003, 2004).

Purpose

The purpose of this article is to help educators explore the strategy of using social studies–related video games in the classroom. More specifically, the purpose of this article is to (1) provide educators with a classroom tested lesson for teaching world history content using *Civilization IV* and (2) provide educators with a list of social studies–related video games (appendix A).

Video Games: Defined

For all the evolution that the game industry has gone through, video games still remain true to a simple premise: They are games that are “played out graphically within a computing environment” (Rice 2005, 3). Video game theorist Gonzalo Frasca (2001, 4) refines the definition a step further, defining video games as “... any forms of computer-based entertainment software, either textual or

image-based, using any electronic platform such as personal computers or consoles and involving one or multiple players in a physical or networked environment.”

Although Frasca’s definition is comprehensive, it fails to acknowledge the potential educational value of video games. Research focusing specifically at video games as opportunities to educate has increased in recent years and suggests that gaming can be a very powerful tool with which to engage learners in rich, immersive experiences (Annetta 2008; Squire 2006). For this reason and for the purposes of this article, video games are defined as games played either alone or collaboratively, in an immersive electronic environment for reasons of entertainment or learning. The addition of the words *immersive* and *learning* should not go unnoticed to those particularly interested in teaching social studies.

Why Use A Video Game?

Long ago, John Dewey recognized that powerful and sustained learning occurs when students are immersed in experience. Video games offer teachers an opportunity to engage students in unique learning experiences. The idea that games can be used as an educational tool is not new. Board games, for instance, have been used to teach character education in western culture for at least one hundred and fifty years (Brown 2008). However, given the current generations penchant for life highly infused with technology, video games provide new avenues to reach students.

In the past decade, the technological innovations have become so profound in gaming technology that game designers are able to create interactive environments in which players must negotiate a series of complex tasks. No longer are players passively following a static storyline, where a singular path will warrant success. Rather, video games have become sophisticated enough that they are a modern “choose your own adventure story” with open-ended problems that affect the outcome of a player’s experience (Shaffer et al. 2005).

Social studies practitioners surely can use other means of immersing students in social studies content, however, what is unique about using a video game is they do so by *doing*, not by *passively* reading or theorizing about it (Squire 2006). David Williamson Shaffer, Kurt R. Squire, Richard Halverson, and James P. M. Gee (2005, 105) contend “video games are important because they let people participate in new worlds. They let players think, talk and act in new ways. Indeed, players come to *inhabit* roles that are otherwise inaccessible to them.” Much of the research focusing on video games as a way to teach argues the benefits of immersive environments to teach content in situated contexts, in which players engage in learning experiences just for the pleasure of doing so (Brown 2008; DeVane and Durga 2008; Gee 2007; Squire 2003a, 2003b). Moreover, research suggests that video games have a positive effect on

student motivation (Bowman 1982) and an opportunity to learn history content (Lee and Probert 2010).

It is for all these reasons that video games should be incorporated into an effective social studies practitioner’s toolbox. Best practices within a social studies classroom call for lessons that students actively engage with rich content. With a little ingenuity and creativity, video games can allow students to:

- become exposed to content in situated contexts
- learn by actively doing for the sake of doing so
- internalize information readily
- solve complex problems in nonprescribed ways

Getting Familiar with Civilization IV

A brief overview

Civilization IV (Civ4) is a turn-based strategy game developed by Firaxis Studios. System requirements to play are relatively low, ensuring that most school lab computers can support the program. Specific requirements call for a 1.2 Ghz processor, 256MB of RAM, 1.7GB of hard drive space and a Windows 2000/XP/Vista operating system. As of July 2010, a copy of the game costs under \$20 at several retail outlets. The Entertainment Software Rating Board (ESRB) has rated it 10+ for cartoon violence (simulated warfare with no gore).

Game play spans from the dawn of human civilization in 4000 B.C.E to 2050 C.E. Players begin with limited resources and one city. The goal of the game is to build an empire spanning the entire globe, requiring the development of more cities, infrastructure, resources, specialized units (civilian and military), and technologies. However, players do not develop their civilization in a vacuum. Rather, a successful campaign requires players to compete with rival civilizations for scarce resources, land, the development of technologies, and warfare. Players are able to micromanage diplomacy with other civilizations, growth management, culture development, resource gathering, technology goals, and combat. As civilizations progress through time and technological epochs, resource types and unit options become increasingly complex and scarce. There are several ways to “win” in Civ4. Players can fulfill one of five goals: conquering all rival societies, occupying a large majority of the map, being the first to explore the Alpha Centauri star system, developing advanced cultures in three cities, or being elected world leader in the United Nations. If the year 2050 C.E. is reached before any of the five goals are attained, the civilization with the highest scores wins. These winning scenarios are a unique element to the Civilization series. Players can choose different routes to success based on their situations, preferences, and dispositions, making this particular game a powerful tool for the social studies classroom.

The role of technology

For the purposes of this article, technology is defined as a discovered skill set, applied knowledge, idea, or tool that allows for new ways of doing something. In the digital age, the notion of technology is closely associated with computers, music players, and phones. However, the reality is that technology is much more encompassing. Written language, governing styles, ideas about theology, and modalities of production have made it so that civilizations all over the planet have the capacity to do things in more efficient and exciting new ways.

Technology is strongly linked to societal development in Civ4. Each city in a player's empire has a certain amount of production capacity based on a city's population size. City size correlates to the amount of infrastructure players invest in their cities. If you build markets and aqueducts to give "citizens" of your city access to goods and water, more "people" will immigrate because the city can support them. The more people in a city, the greater the city's production capacity.

Players have the ability to allocate the production capacity of a city to a combination of several outlets: food production, cultural development, gold gathering, unit and building production, or scientific research. If a player chooses to heavily invest in food production, the empire will be able to support a larger population because it can feed more people. Allocating production capacity toward gold production will result in an increase of wealth for the empire. However, if the choice is made to allocate heavily toward scientific research, the amount of turns it takes to research new technologies is reduced.

New technologies contribute significantly to game play and control several aspects of societies such as government, religion, engineering, knowledge dissemination, and wealth generation. As progress is made, choices available to the player increase exponentially. New technologies lead to more powerful military units, more efficient civilian units, and more dynamic building options with which to compete with rival societies. Whereas a slow, wooden galley was the only possibility early in game play, a powerful, solid steel battleship becomes an available production choice as research into new technologies progresses.

It is important to note that technology development is not linear; rather, choices available to the player are organized in a complex technology tree. Although a select few of the technology choices are stand-alone options with no prerequisite technologies required, most of the eighty-six choices available in the game require foundation technology to build on. Take the game's technology of democracy. It allows societies who choose to govern with it to have an increase in overall population happiness, and it controls for arbitrary declarations of war. In order to acquire democracy, a decision to research philosophy, nationalism, and constitutions must be actively reached during game play. The game provides students with encouragement to criti-

cally examine their situation, articulate a plan of action to successfully negotiate it as well as instant feedback by way of consequences for their choices.

There is no "right" path to technological progress that will lead to winning the game; players are required to make decisions based on the needs of game play. Players are able to freely choose a technology path and explore the relationship technology has had on human development at least in the simulated and situated contexts of game play. It is this aspect of the game that provides a sound basis to use Civ4 to teach NCSS Curriculum Standard VIII. Each student's experience will be customized depending on how intimately they infuse their society with different technologies. A player that chooses technology that expands military technology possibilities will no doubt have a stronger military foundation than one chooses to focus their technology on economic skill sets. Decisions that players make impact later experiences in game play, much like choices that real societies make change the conditions and experiences of members of those societies.

A Lesson Using Civilization IV

Teaching methodology

This lesson was tested in a ninth-grade world history classroom at a large urban public high school in Florida. The lesson is deemed appropriate for middle and secondary students. This lesson is formatted to occupy five class periods (fifty to sixty minutes in length) and can be easily adapted to block scheduling. The primary focus is the exploration of the close relationship that civilization development has with the advance of technology in a secondary social studies classroom. A secondary result of game play causes students to be exposed to economic concepts: specifically, production capacity, distribution, and allocation of scarce resources. Over two days, student groups will develop two civilizations from infancy. One day focuses production capacity on food, culture, wealth, or building production, and the next, balancing out productions to include scientific research to ensure technological advancement. Students will record the total score (indicating civilization development), major events, and accomplishments in both game's scenarios. The lesson will culminate with students creating a chart of their game playing progress and writing an essay evaluating the two guiding questions provided with the lesson.

NCSS Curriculum Standards

Standard II: Time, continuity, and change

Students understand the development of the human experience and their place in time.

Standard VII: Production, distribution, and consumption

Students understand the relationship between supply and demand, the challenges of scarcity, and the distribution of goods and services.

Standard VIII: Science, technology, and society

Students understand the influence that scientific research and technological progress has on societal development.

Lesson guiding questions

1. Does technological development change the course of human history?
2. Should societies invest valuable resources toward technological research when those resources could immediately reduce hunger, housing issues, or the suffering of people?

Role of the teacher

The classroom teacher should expect to act as a technical advisor for students during game play. Often times, students will be unfamiliar with the user interface at the beginning of game play and will require some assistance navigating the game. It is crucial that the teacher becomes intimately aware of how to negotiate the game play experience. This will require that time is spent playing the game for yourself before the students have access to it. A strong suggestion would be to spend the thirty minutes it takes to complete the well-designed tutorial and then try to “win” the game accomplishing all five of the goals. You *must* know how to set and change production capacity allocation from the city management screen. Play with this element of the game to ensure you are comfortable providing guidance to students while they play. If the game setting speed is placed on high, this should take no longer than ten to fifteen hours of game play in total. However, feel free to spend as much time immersing yourself in the game; your students will thank you for it.

Day one

Begin the lesson with the following questions: “What is technology in your own words and how does it influence your life?” Have students take a few minutes to write down their answers. As they finish, have students move to their preassigned partnerships. The video game experience is highly interactive and methodical, requiring constant focus.

Have them share with each other and negotiate a new definition based on their shared perspectives. Call on each group and write down responses on the board. Lead students to a definition that coalesces around the concept that technology is knowledge that when applied gives the ability to do something else. For example, with the development of papyrus, Egyptian civilization was able to form a large, cohesive political system since laws could be easily written and sent to far reaches of the kingdom and detailed records could be kept to keep track of goods, services, and people.

Facilitate a discussion with students around the role that technology plays in their lives and how it affects their human experience. For example, students might bring up

digital music players or computers. Lead them on a discussion regarding how these pieces of technology allow them to connect with each other in new ways to share information via the Internet and that digital music players provide easy access to pop culture. Ask students to reflect on the ways that technology has influenced their social and cognitive development. It is at this point the two guiding questions for the lesson should be introduced and discussed with students at length.

Conclude the lesson with the students playing their way through the tutorial that will get students up to speed on the basics of game play in roughly thirty minutes. If there is time available after the tutorial is completed, allow students to play a sandbox game with “easy” computer opponents. Teachers should be providing any technical assistance that may be needed, as there is somewhat of a learning curve to the game. The tutorial is self-guiding, but some students are more familiar with the game format than others.

Day two

To ensure the students are able to understand the technical aspects of the game, the second day is one in which students are granted access to play in an open-ended environment with the exception of the last fifteen minutes of class. The teacher’s role will be to provide technical assistance, specifically ensuring that all students know how to manipulate production capacity goals through the city management screen. To make sure students are focused, you can offer some incentive for the highest score at the end of the day. Civ4 is fairly intuitive and provides for easy game play.

Provide a list of the different civilizations in game play on the board for students to choose a unique civilization (there are eighteen, and no two groups should share). Pass out the student handout and provide a brief overview of the expectations and assignment that will occur over the next two days.

Day three

Before students begin the game, ensure that they notate the level of difficulty, competing civilizations, and speed (see appendix B). Furthermore, have teams choose a small map size with two competing civilizations. This will make sure that game play occurs under similar situations (it would be wise to set it on easy and fast). Remind students that they will experience the development of a civilization that makes technology a priority. Have students start their default beginning city with the city setting on one of the other production capacities (food, wealth, building, or culture)—anything but scientific production. Tell them that the only way to acquire new technologies is if they trade with other civilizations for them, as they are not to set any production capacity for scientific research in any subsequent cities they settle. By setting production capacity on another societal “need,” students are inadvertently

exploring the second guiding question for the lesson. This would be important to note during the class debrief. Student groups will not be generally successful, as they will be met with “computer” competitors that have invested in technology and will be more advanced, more powerful, and extremely difficult to compete with.

On the scenario 1 handouts (see appendix B), have each student in the group record their team and computer “competitor” scores every five turns; significant events like battles, trades, or achievements; and any challenges the team encountered during game play. For a closing activity, have students write a one-paragraph narrative discussing how successful the team was during the first scenario from their individual perspectives on the space provided for on the worksheet.

Day four

Students should set game speed and difficulty to the same levels of experience from their first experience playing the game. Have students begin a new game with the same civilization, and have students set production capacities to “balanced.” This will evenly distribute all production capacity to food, wealth, culture, building, and scientific progress. Student teams should be encouraged to think about each technology that they choose to research and note the new capabilities that their civilization achieves as a result. The technology advisor in the game can be followed or they make their own pathway.

Although there might be different maps with different resources, setting production to balanced will compensate for it. Like the previous lesson’s game, have each student fill out the scenario 2 handout (see appendix C) and record all information and complete the one-paragraph narrative for the closing activity and bring both handouts to class the next day.

Day five

Restate the two guiding questions for the lesson that were introduced at the beginning of the lesson. Facilitate a debriefing discussion regarding student experiences during game play as they relate to the guiding questions. The point of the conversation is for students to articulate the unique relationship the human experience has had with technological progress and the dangers of investing too little in it. Discuss how teams were not able to advance if they did not invest in technological progress. Ask students to think about life in Sudan or Bangladesh, societies where the luxury to invest in technological progress is almost nonexistent compared to their own.

Sample debriefing questions.

1. Did you have more success during scenario one or scenario two? What types of challenges did you face in each scenario?

2. How did new technologies influence your civilizations development?
3. What was the production capacity focus your team picked? Did investing all your resources in (that production capacity) allow you to compete more or less with the other civilizations? When your production was balanced, were you able to compete better?
4. What does technology allow our society to do every day? How is your own experience enriched and easier because of technology?

The rest of the period, students will create a chart illustrating their score in relation to computer scores in both scenarios on poster boards. The poster boards will also include a detailed list of the technology tree they chose in both scenarios and a list of major events (battle outcomes, new cities founded, cultural accomplishments). Encourage students to be creative and colorful with their poster boards.

For a closing activity, students should evaluate the questions provided for the lesson in essay format (see appendix D). These questions are based on the guiding questions that provided a basis of the lesson. If your state has a writing rubric that is used to assess standardized writing tests, the essay questions were designed to be answered using higher-order thinking.

In addition, this lesson should be tailored to fit the needs of individual classrooms. Teachers should also refer to their respective state curriculum standards to discern how the content of the video games fits within those standards.

Discussion

This lesson was tested in a ninth-grade world history classroom at a large urban public high school in Florida. The classroom student population was a racially and academically diverse group. School demographics are roughly 75 percent minority, the largest ethnic group being Hispanic. Students articulated that they were fairly comfortable using computers and video games, but expressed disbelief that video games could be used to teach about historical content. As the lesson was introduced to the class, one female student shared with the class that she had “never heard of using video games to teach” and that she “thought video games were supposed to be a waste of time?” However, she expressed that it seemed “new, fun, and exciting” to learn history with video games and could not wait until the class started the lesson. Several other students exhibited the same anticipation regarding the lesson.

The procedures were followed closely throughout the implementation of the lessons to ensure an accurate field-testing. Discussion and debriefing questions embedded in the daily lessons were successfully used to generate student-focused conversation. The discussions throughout the implementation were lively, engaging, and captivated students’ attention. Students were genuinely interested in trying to work together to accomplish common tasks and

put forth spirited debate in their groups to come to an agreement on plans of action. What was also clear was that students were heavily engaged and never observed off-task during game play. As students were working in their groups throughout the lesson, an observing teacher was amazed at how hard the students were working. He quietly stated, "I have never had students *this* focused on learning history. Sure we get into conversations about the Romans and the Greeks . . . and the kids love it. . . but you can really tell they are engaged." A male student, who has struggled to maintain his focus in the class, amazed himself with how much initiative he offered to his group. He was overheard in his group saying, "I wish I could do this stuff in every class." Overall, students were engaged, were motivated to learn, and demonstrated very few behavioral issues during field-testing.

In addition, the sophisticated debriefing and subsequent conversations regarding the effects of distributing resources away from fulfilling the basic needs of people and toward technological development were amazing. As the lesson began and the lesson guiding questions were introduced for student consideration, students overwhelmingly expressed a preference toward taking care of the needs of people rather than allocating resources for technological development. During game play, groups became painfully aware of the role that technology plays in the development of human civilization and the consequences of not investing in technology. During the first scenario, when groups limited the technology allocation, several groups had to restart their civilizations because they were eliminated from the map. They were unable to compete with the other "members" of their simulated world with their underdeveloped economy, military, and governing systems. It would be reasonable to assume that students when asked to reevaluate the importance of allocating resources for technological development, they would express support to fund technological development. Fortunately, it did not happen. After the question was posed to the class, the teacher acted little more than a debate moderator. Students explained the costs and benefits of each resource allocation choice with lively discussions and spent time freely articulating their perspectives to their entire class. Student positions became more nuanced, many expressing an understanding that choices are not always easy and that making policy choices required the prioritization of competing interests. A female student shared, "I think that we should try to put efforts into stopping the suffering of people, especially the poor, but need to also look out for everyone in our society. Maybe instead of just picking one or the other, we should try to make sure that people who have the least have enough to get by instead of putting money toward building new technology." Students had moved beyond simple responses toward answers that required higher-order thinking skills.

Overall, the reaction from students, teachers, and administrators regarding the use of this lesson was extremely positive. Specifically, the school principal was amazed by how

focused the students were and how well they were working in groups together in an semiautonomous environment using video games. We were encouraged by how deliberative students were in their groups when making decisions and the sophisticated arguments students demonstrated regarding the lesson guiding questions.

Conclusion

The current generation of students do not know a world without the profuse integration of technology with their lives. They are comfortable using the Internet to connect with people. They keep up to date on the latest pop culture music on their mp3 players. Texting, social networking, and cell phones have become a necessary accessory to many teenagers' lives. Online dictionaries, encyclopedias, and reference Web sites have largely replaced their printed ancestors as research tools. What is evident, however, is that although their lives have increasingly become digitally enhanced, the way students are taught most often has not. As society moves further toward personal digital integration, changing the methodology students are taught with becomes increasingly necessary.

Using Civilization IV in the classroom offers students new tools with which to be engaged in actively creating new connections to content. It is exciting, fast-paced and can be used to encourage high-order thinking. This particular lesson plan provides teachers with a viable, standards-based framework from which to integrate Civilization IV into the classroom setting. These are qualities that will motivate students to take ownership of their learning and ensure teachers engage their students with meaningful lessons.

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Appendix A. Annotated bibliography of social studies-related video games

Commander in Chief, IGS Games, 2009

Stepping into the role of the president of the United States, players have access to a full range of policy choices, negotiations, and political pitfalls. This game allows for the exploration of Constitutionalism, Federalism, the operation of federal government, American foreign policy, and economic policy. Players must work with their set of advisors in the cabinet, both friendly and enemy political operatives, and foreign entities to negotiate a complex web of competing interests so policy and political goals are met. This game is extremely deep in social studies content and is very open-ended in outcomes.

Real Lives, Educational Simulations, 2010

Based on real-world demographic statistics, players are "born" into a random life situation from around the world. Players "grow up" and experience "life" from the perspective that may be far different from their own. How the player does in their simulated life is directly correlated

to the choices they make along the way. What is very interesting about this game is that depending on the situations a player is randomly assigned, the choices available to them change. This is especially true when it comes to choices about education or work. So if a player finds that he or she is born into a strict Muslim family in Bangladesh as a female, the likelihood that he or she will be given the choice to go to school or own a business is very low. These choices are driven by the statistical probability based on accurate data.

Rome: Total War, The Creative Assembly, 2004

This strategy game re-creates some of the complexities of Rome. Players immerse themselves in a world where the nuances of Roman politics are constantly threatening to tear Rome apart, barbarians threaten Roman sophistication from hostile borders, and negotiating tense diplomatic relations is as necessary as a large army. Players are able to experience accurate battles from Roman history in great detail from an intimate perspective. The game play tends to be long, but, because of the level of accuracy that went into the game design, players are given access to Roman culture, politics, and economics.

SimCity 4, E.A. Games, 2004

The fourth incarnation of the classic city simulator allows players to design, build, and operate entire regions from scratch. Game play focuses on economic development and distribution, the influence geographic features have on societal development, and the pressures of competing interests by way of local politics and lobbying groups. To be "successful" in this open-ended game, players must analyze the needs of "citizens" of their city, lay out the necessary infrastructure, and customize public policy to achieve their goals.

Stronghold 2, Firely Studios, 2005

Players of this simulation game experience feudalism, maypoles, and the power of knights of Medieval Europe. With the resources available to the "lord" of the castle, players must grow their fiefdom while protecting it from outside invaders and providing for their "subjects." Economic units are mostly autonomous in their "labors," allowing for greater emphasis on the management of other aspects of life during the dark ages by the player. Two areas of game play that are emphasized are military capacity and cultural life of the community. Players must build food facilities, churches, inns, and military production facilities to make sure that each aspect of their newly built community is protected, fed, and happy.

Appendix B. Scenario 1 handout

NAME: _____ Civilization: _____
 Game Speed and Difficulty: _____

 Civilization Score Chart

Civ/Turn	10	15	20	25	30	35	40	45
MY CIV								

Production Capacity Setting: _____

 Major Battles Chart

Military Unit Type, Number, and Strength

My Civ
 Enemy
 Result
 W/L

Detailed List of Technologies and Acquisition Method:

Major Events/Civilization Accomplishments/New Units Acquired:

Challenges/New Units Encountered/Competitor Achievements:

Overall, how successful was your civilization when competing with the other civilizations? Were you able to keep up? Did you “beat” them? What role did the lack of technology have in this scenario?

Appendix C. Scenario 2 handout

NAME: _____ Civilization: _____
 Game Speed and Difficulty: _____

 Civilization Score Chart

Civ/Turn	10	15	20	25	30	35	40	45
MY CIV								

Production Capacity Setting: BALANCED

 Major Battles Chart

Military Unit Type, Number, and Strength

My Civ
 Enemy
 Result
 W/L

Detailed List of Technologies and Acquisition Method:

Major Events/Civilization Accomplishments/New Units Acquired:

Challenges/New Units Encountered/Competitor Achievements:

Overall, how successful was your civilization when competing with the other civilizations? Were you able to keep up? Did you “beat” them? What role did the lack of technology have in this scenario?

Appendix D. Essay questions

1. Citing two specific examples from game play and two specific examples in history, discuss how technological progress or lack of progress effected a civilization.
2. How much emphasis should a society place on technological development? Imagine you are a ruler of a civilization: What factors would you use to determine how much of your country's resources are allocated toward developing new technologies? How would your decision change if your country couldn't feed itself or did not have enough water? What are some of the consequences your society could suffer if you do not invest enough in technological progress?

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