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## **Using Video Games To Teach Social Studies, Model Careers, And Develop Environmental Identities Within Our Classrooms**

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**Video games as a teaching tool:**

Using video games to teach social studies, model careers, and develop environmental identities within our classrooms

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A capstone submitted in partial fulfillment of the requirements for the degree of Master of Arts in Education: Natural Science and Environmental Education

Hamline University

St. Paul, Minnesota

August 2022

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## TABLE OF CONTENTS

### CHAPTER ONE: Introduction to the Capstone

Introduction.....	4
Growing Up With Gaming .....	6
Graduated Play and Studies.....	8
Professional Significance.....	11
Summary.....	14

### CHAPTER TWO: Literature Review

Introduction.....	16
Social Studies Learning, Defined.....	18
Video Games and their Prior Classroom Use.....	19
Identity and Classroom Learning .....	22
Epistemic Games and Semiotic Domains.....	28
Finishing Thoughts and the Road Forward.....	35

### CHAPTER THREE: Capstone Project Overview

Introduction.....	38
Project description.....	39
Audience.....	41
Academic Foundation.....	44
Timeline.....	44
Assessment.....	46
Summary.....	46

CHAPTER FOUR: Conclusion

Introduction.....	48
Major Learnings.....	49
Revisiting the Literature Review.....	51
Implications and Limitations .....	53
Future Research.....	55
Communicating Results.....	56
Benefiting the Profession.....	56
Summary.....	57
REFERENCES .....	59

## CHAPTER ONE:

### Introduction to the Capstone

#### Introduction

The video game industry has exploded commercially and the capabilities of these games have undergone several technological revolutions since being introduced to international markets back in the 1970's. In 2022 we have video game publishers being purchased for billions of dollars, entire ecosystems on social media and content sites across several media platforms dedicated to video games, Hollywood movies and Tv shows are starring characters from popular game franchises, and there is a chance that anyone from your child to your grandparent may be playing video games on their smartphones right now. Despite this cultural ubiquity, there is one place where video games are not being used to their potential, the classroom. Many of us have extremely fond memories of playing some iteration of *The Oregon Trail* game series in classrooms going all the way back to its original publishing in 1974, but oddly the use of video games as a learning tool within the classroom has hardly grown. This might not be a surprise given that many view video games as a childish, addicting, or trivial pursuit. Similarly comic books and graphic novels were considered worthless and inferior to traditional text before masterpieces like Art Spiegelman's *Maus* won a Pulitzer, or Marjane Satrapi's *Persepolis* became required reading within high schools and universities. The exponential growth of technology alongside the video game industry has created massively powerful simulation games that have the capability to engage our students and provide experiences that go so far above and beyond what *The Oregon Trail* introduced decades ago. Video games are incredible tools that allow students to build and

manage their own cities or engage in diplomacy with other nations. Instead of using this tool, we constantly wonder why kids are disengaged within our classrooms, why they don't feel like their learning matters, and why we can't get them excited about the world outside of the classroom and their homes.

Video games belong in the classroom as a teaching tool. The question isn't "should we be using simulation games within the classroom", but instead *how can we use simulation games within the classroom* and *how can we use these games to provide meaningful and impactful experiences for our students?* Within this project I'll be exploring both the need for this form of digital media to be validated within the classroom, as well as specifically how I believe we can use games to engage students in social studies concepts, provide career modeling in fields that contribute to ever changing societal needs, and even developing pro-environmental attitudes for a world undergoing climate crisis.

The following sections of this chapter will address how a lifetime of gaming has coexisted alongside a lifetime of social studies passion within my personal life. Although they never seemed like two obviously connected passions, it is explained how they continued to feed off one another and inspire curiosity that eventually inspired me in my professional life to this day. From there rationale is given for why schools should be using video games as an educational tool as a method of engaging modern students in a manner that is relevant and honors their interests and passions, as well as providing them with the tools to make greater changes in their communities. The chapter then concludes with an introductory description of the project and its intended goals, before moving on to the academic research that is to be covered in chapter two.

## **Growing Up With Gaming**

If you are the younger sibling within a family that has video games, chances are you annoyed your older sibling, or kept them company right over their shoulder, as they played video games. These early memories are for me essential building blocks to a life of engaging play with video games, but more curiously my love of social studies. A particularly impactful game that I first watched and day dreamed about before even being able to play was *Age of Empires*. In *Age of Empires* you select and play as a civilization starting in the Stone age and finish in the Iron Age (roughly 1400 BCE to 500 BCE). The civilization choices are modeled after real life historical groups ranging from the Babalonians to the Persians, and are grounded in a great deal of historical research. The game was first published in 1997 so graphics were humble compared to today's games, but each civilization had some unique troops and buildings that represented actual details from the era, so for example the ancient Greek civilizations had the unique unit or troop, the Hoplite, which had a spear, shield and armor set based off of actual historical Greek artifacts. These little details combined with historical maps and other in game art work fascinated me and that spark started to show up in other places. As the game series grew over time I continued to be introduced to more historical periods and even mythological concepts after the spin off game *Age of Mythology* became popular. This led to me finding books within my local and school libraries about different ancient civilizations or mythological gods and creatures. With no coincidence I also loved one topic above all else in grade school and approached almost every subject within it with confidence and excitement, social studies. Through these early games I had an increased interest in improving my reading because I wanted to know what was going on and to learn more, I

had an above average handle on analyzing maps, and I even had a starting grasp on the basic needs for a successful society including farming, logging, and mining. In a rather cute example, my small K-8 had an 8th grade ceremony that handed out specific awards to the graduating students that reflected each of their own talents such as “most athletic,” “most artistic,” or “best math student.” My 3rd grade teacher held a smaller ceremony within our class the next day and I, alongside my friend Colin Armstead, won the “Best Social Studies Student” award. I don’t remember much about the 3rd grade anymore, so it says something about how much this moment stands out. I was good at something and it being acknowledged fed my passion and gave me confidence moving forward.

Moving on to high school I was in a bit of a personal crisis. My family had moved to North St. Paul and I went from a small catholic school to a very large public school where I didn’t know a single person. My grades my first year reflected someone who was struggling to figure out who they were. Eventually I found myself doing well again through social studies classes. I wasn’t the most committed student by any measure, but in my AP history classes I didn’t need to be because I enjoyed being there and learning came naturally. I also became obsessed with the new and growing *Assassin's Creed* series. The first game took place across four cities within the Holy Land during the third Crusade (1191 CE) including Demacous, Jerusalem, Maysaf and Acre. What was amazing was the level of detail the developer Ubisoft put into recreating these cities and environments within the game. Essentially you were running around meticulously researched and recreated cities. Before I graduated highschool they would come out with multiple games that took place in Italian cities during the Renaissance period. Each were increasingly impressive recreations of cities that felt real and I would spend countless

hours just exploring. When it came time to start thinking about college and careers I could pursue after high school, I kept thinking about how strong of a student I was within social studies classes, but all I could see as options in front of me were being a historian, working at some sort of museum, or teaching social studies.

Fast forward roughly ten years and I've graduated from Winona State University with a social studies teaching degree and have taught 8th grade global studies at North View Middle School for six years. I've played video games in one form or another the whole time but the only real significance or connections to the classroom are the bridges it built between me and my students as we got to know one another. When I signed up to enter graduate school I made what would be an impactful purchase that directed a ton of my learning and daydreaming. I needed a new laptop to complete online school so I figured that I might as well buy a gaming laptop so I could enjoy myself after a long day's study. What seemed like a bit of a mischievous mindset actually had a massive positive impact on my studies because the separate spheres of learning and playing became blended as each would bleed into the other.

### **Graduated Play and Studies**

Computer gaming offers greater ease and access to simulation games compared to home consoles. Simulation games are an incredibly diverse style of game that can be most simply explained as games that closely simulate a real world activity or concepts. My favorite style of these games is the city building genre where you most commonly build city structures, road networks, and manage supply chains. I've always liked this style of game, but going back to them as an experienced social studies teacher and graduate student was eye opening. Another important factor in the equation is that I had

gone back to school to join an environmental education grad school program. Although video games might seem antithetical to environmental education, that couldn't be further from the truth. Games are a reflection of culture so if social consciousness shifts, you'll see that in games the same way you would in reading or film. Games now have been or are being developed to tell stories around environmentalism or allow for simulations that challenge you to build your nations or cities while maintaining levels of pollution and/or combating environmental degradation. Games continued to grow and evolve over time, and as I gained more experience in life I noticed that I wasn't finding games more and more childish, but instead finding greater significance and more surprisingly, untapped potential.

As I played these games after classwork I began to wonder why nobody has introduced them into the classroom. I loved *The Oregon Trail* in grade school but why was that the only example many people can point to within school for a social studies game? As the *Assassin's Creed* series continued along you could read the occasional article of a college professor using the "discovery mode" in the game where there is no violence and you tour the gorgeous landscapes that were meticulously crafted with painstaking detail and backed by mountains of historical research, but the stories were always more of the "look at how cool and unique this approach to class is" as opposed to "this is something more schools should be doing." As I obsessed over little details maintaining road hierarchy and land use management in my city building game, *Cities Skylines*, I began to wonder why this wasn't being used to teach 9th grade human geography where students often struggle to pay attention as they have supply chains and other crucial and foundational city building concepts taught to them. Every year when I

teach the basics of geography and map reading skills, I use video games as a relatable example of the use of maps along with specific tips and how to read them, so why not include that within class? Kids are sitting around bored with the way in which they are taught, meanwhile games are being developed with the sole intention of teaching basic economic concepts, government systems, and other social studies skills. The potential is there to use these not just as tools to teach through, but even more simply as points of inspiration and visualization. When we learn, oftentimes the information doesn't stick because we don't have any visualization of a reference point that helps the content stay with us. Video games can now provide students with the ability to see what they are reading about and become immersed within the recreated worlds or simulations. At the very least, there is something to be said about students taking what they learned and maybe picking up a new historically themed book, youtube channel, or show on their favorite streaming service.

Oddly, I was also frustrated by a nagging feeling of regret playing these simulation games. Although I have made an enjoyable career in teaching, as mentioned before I never felt like I really had any other options with social studies careers. My teachers, although talented and caring, mostly focused on history and never spent even a fleeting moment modeling any sort of social studies related career or even any reason for our learning aside from cliches like history repeating itself. I'd play these games and think of how cool it would be to be a city planner or civil engineer, but I literally didn't know those were jobs until well after I graduated college. I then realized that these simulation games had even more potential beyond engaging students in social studies concepts, but also in modeling potential careers. As mentioned before, a simulation game

simulates real world tasks, ideas, or concepts. The industry and market for these games is so large that some simulate tasks ranging from things as humble and tedious as lawn mowing, to as daunting and complex as running democratic nations or creating intricate production chains in Soviet area Communist nations. Many of these games sell well and people find them fun. When playing and enjoying it as a professional, I couldn't help but notice how much better a time class could be when instead of just talking about these concepts, we played and built as practice or taught the direct themes the games are centered around like saving the earth from environmental decay.

### **Professional Significance**

I've been in charge of a social studies classroom for six years now and things are a lot different from when I was a student not so long ago. Since the written works of *Lies My Teacher Told Me* by James W. Loewen and *A People's History* series by Howard Zinn, the one-sided and irresponsible nature of standardized textbooks have been exposed, leading to greater responsibility around curation from social studies teachers. Materials are still made for and can be purchased by teachers to use, but public interest and scrutiny are higher than ever. Additionally students' attention demands more than powerpoint presentations and multiple choice tests that hammer home rote memorization. Teachers can and do implement engaging activities such as role plays, class projects based around choice, and the reading of graphic novels or young adult focused literature, but more materials that students genuinely enjoy are needed. Video games would not replace class materials or be the only thing covered in a class, but instead they could be tools of engagement and extension. Many students play games in their personal life, are often very good at them, and learn very quickly within the worlds they provide.

Carefully selected and planned games could serve as a way of exciting students about new material. This could help engage students in social studies learning and provide reasons for students to do additional research or extended learning. Furthermore, the impact of these games within the room have the potential to spill out into their lives and careers in profound ways.

Introducing students to these different experiences that games provide also can lead to future career paths as well as real life community improvement. A student who had their passion for city planning sparked in their high school class could theoretically be given a greater lens of which to view the neighborhoods they lived in. In *Cities Skylines* you have to be careful when placing different necessary city functions like garbage disposal or other polluting factors of industry. If you place them next to residential zones, the citizens in those neighborhoods deal with greater levels of sickness from groundwater pollution as well as increased noise pollution from traffic and industry. This knowledge builds when playing the game and you can see ramifications ranging from unhappy citizens, lower property value, and in the worst cases, sickness and death. With this new perspective and lens of which to view their own neighborhoods, consider the conversations you could have in classrooms around equity. What do they now notice about their own neighborhoods? Do they have the same access to public green spaces? Are their homes close to major sources of pollution? How many key public facilities of safety and quality of life do they live near? From there maybe they don't want to be a city planner who combats these issues, but maybe they now start asking questions about what they can do to better their neighborhoods. What are the legal processes involved? Why are things in my neighborhood this way, but substantially nicer in the one next door? As a

teacher you've now modeled what types of careers impact these real world issues and you've empowered your students to turn learning into something that matters to them. From there, maybe when they get to 12th grade Government class they aren't asking why they need to learn about the political system, but instead how they can use the legal system to better serve their community and its future.

Students have and always will ask why they need to be learning what is being assigned. Video games will not make every student happy and they will not make every student more invested within school. What they have the potential to do is make learning more engaging and potentially more impactful and personal. Video games are a dominant force within popular culture of school age kids, and they're also incredibly powerful tools that can be used in an increasingly technologically focused landscape. We have in front of us immersive worlds where students can make mistakes without fear. They can build and experiment with actualized results right in front of them as opposed to simply theorizing what might happen. In some cases we can literally model potential careers or community improvements that make differences in their day to day lives. The potential is there, we just need to start trying out new tools and methods.

Within this project I'm looking to advocate to fellow teachers to begin using simulation games as a part of their instruction. Even if more schools began implementing electives around strategy games or after school programming, building blocks are being laid down for the greater use of these games in schools as teachers and parents become more familiar with the positive outcomes. Getting games into schools will require more professionals, administrations, and parents to be aware of the research and academic work done in regards to video games as legit tools of learning, and teachers are going to

need a support in not just how to effectively teach with selected video games, but also how to convince the school community that its the right move.

### **Summary**

Throughout my life video games and social studies have been two areas of interest that have fed into the other back and forth. I don't think that this would be a perfect way to learn for every single student, but I do believe that video games, specifically simulation style games, are an incredible source that we need to tap into. We as educators constantly preach that we need to give students more engaging forms of learning, better use and integration of technology within the classroom, and provide experiences that inspire a lifetime of learning, but then proceed to focus on worksheets and other activities that prepare them more for standardized testing than their lives. There are plenty of politics involved that complicate matters, but what if we stopped treating video games as demonized distractions, and instead as another tool to teach meaningful instruction? The gaming industry has grown so much over the years and generations have now grown up alongside them. My parents had no interest in playing video games with me, nor did they have the literacy around them to really engage, but as a teacher I hear about students playing games with their parents or games their parents passed down to them. Most students have some form of gaming console within their homes and have some familiarity and fluency around gaming, so we should be using those skills and literacy to everyone's benefit. Games have the power to teach social studies concepts, provide real life modeling that can lead to careers or greater community involvement, and even be used to help foster more pro-environmental attitudes that we'll need as a society to combat climate change, so why aren't we using them?

The following chapter is a literacy review on video games as an educational tool as well as the types of learning that can be achieved through playing these games. It serves as the academic backbone that supports my life of social studies learning through play covered in this chapter, as well as the crucial validation for my advocacy project layed out in chapter three. As recently as this February of 2022 I caught a student scanning a map of the Middle East in the closing minutes of class. Curiously I walked over and asked what caught her eye. She told me she was looking for Damascus. I led her to modern day Syria and inquisitively asked what had sparked her search. As it turns out she, like my young self at roughly her age, had begun playing the *Assassin's Creed* series and had become just a little more curious and invested when she got to school. I know the positive impact that games can have on a student's education and life. This project was created to make sure we can expand the student experience. By educating professionals as well as families on the learning concepts and validity of video games as a learning tool, we can become more comfortable and skilled in the ways we implement them within the classroom.

## **CHAPTER TWO:**

### **Literature Review**

#### **Introduction**

Social studies teaching is in need of modernization and greater support. Although many teachers create incredibly diverse and forward thinking content for their students, the burden of creation and careful curation has become an increasingly large task that has been added to teacher workloads. From the student perspective, textbooks, lectures, and slides are not the most engaging ways to take in needed information. Often assignments and/or tests do not allow for students to learn through failure, experiment with different ideas, or engage in an activity that excites them. Perhaps worst of all, learning doesn't always reflect lived realities or give students a greater idea of what types of careers are possible within the social studies field.

Social studies classes can and should do a better job of highlighting potential careers for students and help develop the professional skills associated with those jobs. They also, along with all core classes, could do a lot more in the growing fight against climate change (Cloud et al., 2017). Students and professionals alike want their actions to matter and see results meaningful to them. We are currently missing out on an opportunity to provide students with tools that allow them to think like politicians, civil engineers, or embrace different perspectives of historical figures (Devlin-Scherer & Sardone, 2010; Watson, Mong, & Harris, 2011). Remembering facts should never be the goal of social studies learning. At its best, social studies teaching helps you evaluate the greater world around you and gives you the tools to take action as an active global citizen. The classroom should be a protected space where students can practice and grow

skills and mindsets that reflect their communities locally and globally (National Council for the Social Studies, 2022, MN K-12 Social Studies Standards, 2022.)

An incredibly helpful and powerful tool for engaging and meaningful instruction happens to be hiding in plain sight. That tool is video games. *How can we use video games to teach social studies, model potential careers, and develop environmental identities within our classrooms?* The answers are right in front of us, but still they haven't been used to anywhere near their potential. Video games have made incredible advancements in the last forty years. Alongside that growth, academic thought and works have increasingly turned their attention to video games and validate their potential in teaching and learning. The problem is that as school communities, we have yet to embrace them.

The following chapter is a literature review of video games and the learning that can be done through them. The social studies skills and knowledge that can be learned through video games are addressed and laid out first, before getting into works that clarify what video games are and their prior use for learning. This leads to research and discussions around identity and other active learning concepts that connect to gaming and instructional decisions within the classroom. Examples from existing scholarship are given alongside professional and personal experiences that highlight the potential for games as teaching tools. The conversation is then extended to include the validity of video games in developing mindsets helpful in social studies related job fields, as well as in developing pro environmental attitudes in students towards the greater discussion around climate change. Before concluding, a brief description of the capstone project is

given as it relates to the research as well as how it aims to help create a future in which games are being implemented within the classroom.

### **Social Studies Learning, Defined**

Social studies is a wide ranging subject that essentially covers all things humanity and our relations to each other and the world. The larger topics within social studies are history, civics, economics, geography, sociology, psychology, and ethnic studies (MN K-12 Social Studies Standards, 2022). The main purpose or goal of social studies teaching is developing students' abilities to make informed and reasoned decisions for the public good as local and global citizens of a diverse, democratic and increasingly interdependent world (National Council for the Social Studies, 2022). In the state of Minnesota, the mission statement for social studies teaching is very similar and read as follows, "Social Studies empowers learners to become inquisitive, informed, and engaged members of society who use critical thinking, inquiry, and literacy to prepare for college, careers and civic life" (MN K-12 Social Studies Standards, 2022). Both mission statements spell out the desire to equip students with the analytical skills to participate within a democratic society as well as making choices for the betterment of society as opposed to thinking solely of oneself. In the Minnesota Standards of Social Studies Teaching, it is specifically mentioned that students should be gaining skills that prepare them for college, careers, and civic life. To accomplish this students are asked to view historical and modern issues through multiple contexts and perspectives. They participate in simulations that engage and practice civic skills such as voting, public advocacy, and policy decisions. Students are also asked to research, analyze and defend their positions in manners of law or ways of which to positively drive the economy.

The intended outcome of social studies practice is for students to potentially engage in careers within the social studies field such as politicians, lawyers, city planners, or economists, but school is more than just job training, so it is also desired for students to be active participants within society who vote and civically are engaged within their community. This creates citizens who protest when things are going wrong, advocate for positive change in caring for their neighbors, or provide input to increasing public green spaces within their cities. With how diverse the commercial video game landscape has become, specifically around simulation style games, students could be engaging in all of these principles and concepts through play. The teacher wouldn't have to stretch themselves thin or overly rely on provided materials, but instead could be using the tools that video games provide to reach these very goals of social studies instruction.

### **Video Games and Their Prior Classroom Use**

Video games are so broad and wide ranging that they aren't as easy to define as one might believe. In the simplest terms, video games are a digital visual creation made by humans to entertain. There is a lot of subjectivity involved, but in video games you play or operate within rules or realities in which the developer of the game created. Under this definition a classic game like chess or checkers becomes a video game when played digitally (Tavinor, 2008), so for the purposes of this research and project, video games are digital media designed to interactively engage and entertain the user. Entertainment is an incredibly important factor because within video game research it is shown that video games are more effective in engaging and teaching users when the individual is having fun. An example of this is a player's tendency to skip over non essential text that isn't directly related to gameplay (Akkerman et al., 2009). This is why the phrasing of

“education tool” is used in this paper for video games. Video games provide an engaging method of learning and/or an experience that extends learning, but are not on their own everything a student would need.

Meta analysis on studies of video games’ effectiveness within the classroom in teaching within the core subjects of literature arts, mathematics, physical education, science and history are inconclusive and deemed to only hint at the value of video games within the classroom. (Young et al., 2012) One of the major issues cited within the study was the lack of cohesive themes in peer-reviewed articles, as well as some constraints of the traditional school day and teaching. Teachers are required to cover a very large range of content throughout the year and are expected to show evidence of learning in individual class periods. Students need more relaxed, and partially unstructured time, to invest and once again have fun. From a teacher's perspective it's hard to justify giving that breathing time when you have many obligations and restraints within the year. This all points to video game use within the classroom still being within an infancy period. There is no universally developed, adapted and trained method for using these games as a tool. Therefore there is some understanding of the effectiveness of video games within the classroom, and some specifics on social studies content, but findings are still inconclusive and covering different and not always related subjects or standards of learning.

In studies specifically done on social studies teaching through video games, it is found that video games are effective in teaching, but particularly when done in combination with skilled teaching, planning, and instruction (Devlin-Scherer & Sardone, 2010; Watson, Mong, & Harris, 2011; Lee & Probert, 2010; Squire, 2005). Students

therefore benefit from the use of video games as instructional tools, but once again there is a need for teachers to be knowledgeable and intentional with the games and their use. Within a study conducted on the use of the game *Civilization 4*, it was found that students reported increases in knowledge of maps, timelines and historical terms, with the heavy caveat that the instructor needed to have a good deal of game experience to facilitate the learning (Squire et al. 2005). This once again points to games being a tool of which the instructor also needs to be familiar to operate correctly. Positive benefits that are conclusive are that video games in social studies classrooms have been linked to increases in student motivation, engagement and interest level within these classes (Annetta, 2008). This was also found to be particularly true for students who were identified as timorous and/or passive. This also extends to academically lower performing students, as well as minority populations, who have been found to respond to video game instruction more than traditional classroom approaches (Squire and Jenkins 2003).

In conclusion there are positive outcomes related to video games in social studies classrooms around student interest and engagement, but inconclusive outcomes around retained learning or empirically driven academic outcomes. There has been a good amount of research done to this point, but it's fair to argue that more structure and cohesion are needed to provide stronger results and conclusions moving forward. That being said, there is still a great deal of academic thought and research around the types of learning and positive influence of video games and their uses for learning. The development and exploration of player identity, active learning concepts, as well as video game player behavior are all topics that have been studied and reasonably linked to the validity of video games as instructional tools.

## **Identity and Classroom Learning**

Our social and personal identities are composed of, but not limited to, factors such as age, gender, race, profession and/or hobbies. These factors are incredibly important to understand because they help compose how we see and interpret the world, as well as how others see and interpret our actions (Day, 2012). Some pieces of our identity are more influential than others, many of them can compete or be in contradiction with one another, and often identities shift and change over time (Jacobson & Mustafa, 2019). Regardless, all factors do have influence and should be reflected upon because it is believed that by better understanding our identities, we can better analyze the world and systems of which we live in. When viewing our own work we can become more aware of stereotypes and assumptions that are rooted within social identities and question how things came to be or how we can better them (Jacobson and Mustafa, 2019). This is incredibly important in understanding both the students we wish to serve, as well as the methods of which we are teaching them.

Within the learning setting, identity is incredibly important. Throughout school, students are put into different positions or contexts of which their identity has the possibility of shaping their experience or access to learning. Additionally identities are also affected or shaped by the cultural practices and social norms of the community. These factors essentially position how much agency, power, or comfort a student has within the setting, and therefore their levels of learning success (Collett, 2020). As students grow older, these identities broaden and become more complex and even more impactful. With that, the importance of understanding our students and how their cultures fits into their education is incredibly important in reaching their potential (Pollard &

Filer, 2007). Video games are themselves a large piece of student and adult culture alike, but that alone is not where their strength lies. The open nature of video game play gives access to identities that relate to social studies teaching or understanding, the development of identities in social studies careers, and the development of environmental identities that are crucial in shaping our society towards a more sustainable future.

### ***Identity Within Historical Social Studies Learning***

Understanding perspective, or point of view, is an incredibly important concept to learning and is required in Common Core Standards for English and Social Studies (Common Core State Standard Initiative, 2022). In social studies, point of view is crucial to understanding history. To come to a greater understanding of the past and present, it is important to gather from and understand multiple sources or perspectives. This gives us a more holistic understanding of what really happened, as well as makes sure that more dominant narratives do not become the sole, but inaccurate truth. (Stanford History Education Group, 2018) In pushing students to think beyond their own reality and better understand the perspectives of others, teachers employ activities such as role plays or perspective writings that guide the student in thinking, and therefore hopefully better understanding another view point. Video games interestingly offer an interactive opportunity to do so.

Video games have become advanced enough that they offer immersive interactive recreations of historical cities or even entire planets. These “worlds” offer players the chance to explore and live through the eyes of specific characters, often of which are based on historical figures. Narratives embedded in historical and/or social studies based video games offer students the opportunity to reenact, replay, and gain first person

experiences, which has led to several studies highlighting history based games as effective teaching tools beyond traditional methods (Devlin-Scherer & Sardone, 2010; Watson, Mong, & Harris, 2011). This is because the games allow for students to take on the identities and perspectives of specific individuals, or groups of people within a specific context, which equips them with a more holistic approach to situational learning (Young et al., 2012). Video games let players think, talk and act in new ways as they take on new roles that were previously unavailable (Shaffer et al., 2005). This is similar to a teacher assigning a student a specific role or perspective to research, but in this case video games allow students to more fully immerse themselves in an interactive way. *The Oregon Trail* let students be the settlers moving West to learn about the hardships real settlers faced. Players reenacting the very tough journey had to deal with the many mishaps within the gameplay such as death from dysentery, running out of supplies, or facing brutal weather conditions. Today students can play “Discovery Mode” in *Assassin's Creed* which allows them to peacefully (without any combat or violence) walk through ancient cities in Greece and Egypt as a citizen of that nation. Games being created today have the ability to make one feel or identify with different positions with life, in and out of school.

### ***Identity and Civic Engagement***

Another foundational topic or theme within social studies learning is civics or civic learning. As previously touched upon when covering social studies standards, both the National Council for Social Studies and Minnesota’s State Social Studies Standards call for social studies teaching to inform students on democratic practices and encourage meaningful civic participation (MN K-12 Social Studies Standards, 2022; National

Council for the Social Studies, 2022). To do so students need to be made aware of different and often competing opinions on how to meet public needs, methods of dialogue and discourse towards public action, and understanding of the legal system and its many layers.

Essentially if students are going to uphold a democratic society, those principals need to be learned and practiced (Reichert and Print, 2017). Within the classroom this could include formal political activities like voting, and informal activities of civic engagement like volunteering, working together on common community issues, or contributing to charitable causes (Kahne et al., 2009). These activities get students involved and stretch their understanding beyond just their own reality or perspectives. In other words, it develops more of a community or collective identity. Video games are increasing in their variety and complexity, so can now better provide students with a wider range of civic gaming experiences (Kahne et al., 2009).

Within populations that play games, those who play socially online or with friends have been found to be more likely to be civically and/or politically engaged than those who play alone (Kahne et al., 2009). More interestingly depending on what type of game they enjoy playing the most, statistics show different increased interests or involvements. For example, players in this study who favored playing *Halo*, a popular first person shooting game, responded to be more likely to help guide other players or serve as a teacher within the game. Players whose favorite game was *The Sims*, a popular lifestyle management/simulation game series where the user plays as an in game avatar of whomever they choose to create, are more likely to have learned about problems within society, explored social issues, or have made a decision about how a city is run while

playing video games compared to gamers of other game styles (Kahne et al., 2009). To drive this point home, there is an infamous well publicized case where members of an online community of the game, *The Sims Online*, had a heated political campaign for a political position in game between a 14-year old player and a 21-year old incumbent. The campaigns got so intense and mirrored the reality of real life politics, for better and worse, so well that the story gained national attention as users created campaigns around better schooling, policing and offering better lives for the community (Shaffer et al., 2005). The game provided them a space and platform to develop identities outside of the capabilities of their current day to day lives. They were expanding their roles and appealing to the greater community identities they had formed in the games online shared space. This reflects an experience similar to running for class president or advocating within school for community change. Video games provide practice space, inspiration and experiences that are crucial to giving students skills and allowing them to develop identities that are meaningful beyond or after traditional schooling (Gee, 2007).

### ***Environmental Identity and Gaming***

Environmental identity is another piece that makes up someone's mindset and outlook on the world. Specifically, environmental identity encompasses one's relationship to nature and the ways in which people position themselves to the non-human natural world (Clayton 2003). It is believed that one way to encourage pro-environmental behavior is through promoting or encouraging the development of environmental identities among young people who experience nature (McGuire, 2015; Stapleton, 2015). When students are able to experience at-risk nature first hand such as glacier landscapes, they have reported increases in desire to share with others environmental concerns as well as

developing a deeper understanding of human impact on the environment (Young, 2020). Not all schools are geographically positioned to do so, nor do they have the proper funding such trips and experiences may take. There is potential to have simulated experiences take that place and help teach our students in a more interactive way. They can play as characters that are living through the changes or are even actively fighting them.

Video games may seem to be the antithesis of outdoor activities and education, but they actually provide players with experiences to interact, learn about, and even care for nature (Fisher et al., 2021; Crowley et al., 2021). Although nothing quite replaces experiencing nature first hand in all of its glory, digital depictions of nature have been shown to affect the way people understand and behave towards the natural world (Silk et al., 2021). Studies conducted on the effectiveness of video games as an effective tool to increase young people's engagement with climate change issues show positive, but limited correlations. Some researchers report positive effects on awareness, knowledge, attitudes and behavior, while others find little to no correlation (Ouariachi et al., 2019). What links the competing studies is that game design is an important example. It is believed that an effective way to promote environmental action through video games is for designers of games to tap into identity connections and relevant personal experiences (Ouariachi et al., 2019). Games have the power to appeal to players' identities, both who they are now and who they might want to be (Heath and Heath, 2010). By doing so games have the ability to relate to the player and inspire. Similarly to experiencing something first hand, games provide you with connections and emotions to characters you invest in over time.

## ***Conclusion***

At this point in time video games in the social studies classroom have been studied, but there hasn't been enough consistency or alignment of measurable outcomes. Although many studies point to positive gains of effectiveness, others study outcomes are less confident and find effectiveness inconclusive at best. That being said researchers find enough potential to call for further studies around video game use within the classroom. Until then we can take insight from some specific findings and related studies that have been further solidified. For video games there is a strong correlation and connection to identity and how educators can tap into identity to push student learning further, to identify one's current or potential role within their community, and to help foster a pro-environmental identity. Video games allow students to see themselves within the world, or try on new identities far beyond what they could have previously imagined. As games develop and become more advanced they allow the player to become more involved and experience new identities. Interestingly those experiences are modeling real life jobs and can train students to think like someone from that profession or field. This allows for students to gain legitimate experience that could help meet schooling goals of giving students real life skills and job readiness. In the next section games as training and the legitimate skills they pass on to the player are explored in greater detail.

## **Epistemic Games and Semiotic Domains**

Epistemology is the psychological study of what it means to know something, or the study of knowledge itself (Shaffer 2006). As previously mentioned, simulation computer games have become advanced enough that they can replicate incredibly complex and powerful systems that mirror reality. Through this we have developed an

incredibly useful tool that still hasn't been fully harnessed called epistemic games.

Epistemic games are games that are fundamentally about learning to think in innovative ways (Shaffer, 2006). Within an educational context this could mean learning to think like a civil engineer, in the professional context this could mean learning to think and act like a soldier, and in the casual or leisurely context this could mean learning how to better care for the earth around us. Going beyond developing mindsets or identities as previously discussed, epistemic learning has the potential to deliver the skills and greater first hand knowledge of academic domains, potential future careers, or collective community involvement.

A very important distinction to make is that commercial games made for fun are not by definition epistemic games. To be an epistemic game, the game has to have been designed with educational or training outcomes from the ground up. This does not mean that commercial games do not teach players important skills, because they in fact can be viewed as very helpful towards learning. A lens of which to view this learning is what video game academic and advocate James Paul Gee calls a semiotic domain. A semiotic domain describes the type of active learning that takes place in video games despite their commercial design (Gee, 2007). Gee argues that video games are immersive experiences where the player is learning through the game's images, actions, environments and game play experience. So although many commercial games have to forsake accuracy for fun and playability, there are still learning outcomes that can be derived from commercial games (Shaffer 2006; Gee, 2007).

The following sections are dedicated to understanding the benefits of epistemic games and commercial games within classrooms towards academic concepts or skills,

modeling and/or training for future careers, and the stewardship of our Earth to combat climate change. Epistemic games are newer and more niche by definition, so the academic works surrounding them are primarily based on early findings and the principals the games are designed around. Therefore it is useful to compare what has been studied on the learning from commercial games through the lens of semiotic domains and reflect upon how the greater advocacy, use, and study of epistemic games could look like in the classroom or workforce.

### ***Building Cities within the Classroom***

Within simulation style video gaming there is a prominent subsection called city builders or God games. Within these games the players literally build and manage complex systems ranging from running and operating zoos like in the game *Zoo Tycoon* , to massive cities with populations in the hundreds of thousands in games like *SimCity* or *Cities Skylines*. They are often called God games because the players are not responsible for any social process for decision making and can create and deal with any consequences as they desire (Shaffer 2006). These games are made to engage the player and provide entertainment, but due to their complex systems and themes they are still provided with concrete experiences that make abstract concepts and theories that are common in social studies come to life (Maguth et al., 2014).

A commercial or entertainment based game that has been extensively researched due to its age and popularity is *SimCity*. Studies of the city building game *SimCity* have found it to be an effective tool for geography education by stimulating student interest, engaging in urban geography concepts and skills, and land use and management (Gaber, 2007; Bereitschaft, 2016; Shepardson, 2019; Kim & Shin, 2016). Interestingly, even the

game's limitations provided for rich conversations and analysis for students (Kim, & Shin, 2016; Bereitschaft, 2016). An important caveat once again comes alongside these positive findings of the use of video games within the classroom, which is the stated importance of skilled and intentional teaching. These studies do not point to *SimCity* being a stand alone tool, but point out the importance of curriculum support around desired educational outcomes, the need for teacher expertise of the game, as well as detailed instructions on basic gameplay functions for new players (Gaber, 2007; Bereitschaft, 2016; Shepardson, 2019; Kim & Shin, 2016). These studies provide teachers with assurances that learning social studies content through entertainment based games does have academic merit, but come with misconceptions that need to be addressed as well as a need for a sound instructional plan from the teacher. Another way to look at it is that these games provide a solid entry point and motivation to students, which could lead to the next level, epistemic games.

### ***Thinking Like a Professional***

Epistemic games such as *Urban Science*, *Madison 2200* and *iPlan* are games designed to get players thinking and learning about the ways professionals face the complexities of urban planning (Shaffer, 2006; Shaffer et al., 2005). Unlike “God games” such as *SimCity* or *Cities Skylines*, epistemic games have more constraints and can more accurately reflect the reality of the profession they are modeled after. For example, in the game *Urban Science* players get a city budget plan and letters from concerned citizens about issues such as crime, revenue, jobs, waste traffic and affordable housing. They conduct site assessments as well as meet with citizens and community groups who are voicing their various opinions and concerns. From there players use *iPlan*, an interactive

tool itself to create a redevelopment plan. Player choices have consequences and therefore careful planning and considerations are needed (Shaffer, 2006). In a study conducted using eleven at-risk high school students who played multiple sessions of the game *Urban Science* totalling ten hours, results showed positive educational outcomes. Players were interviewed before and after the game, and their exit interviews showed that players had a better understanding of ecology, thinking around urban issues were shown to be more complex with an average increase of 72% more connections, and most significantly players came to see themselves as planners and see the world through the epistemic frame of planning. (Beckett and Shaffer, 2005) These results are promising, although admittedly eleven students is not a massive sample size to draw conclusions from, so wider use and study of the game are needed.

A reasonable conclusion for why there isn't widespread studies on epistemic social studies games, or why there is only a small selection of games made, is due to the complexity of making the games and a lack of a consumer audience. In a study designed to provide a synthesis of best practices of epistemic video game design, authors Nikki Kim Boots and Johannes Strobel explain that the amount of data, programming and design needed to create these games take years to assemble. Further they point out that it would be unlikely to see a true diversity of professions represented in these games due to said complexities of development combined with the intricacies and differing perspectives on many careers (Boots & Strobel, 2014). Boots and Strobel do find epistemic games to be immersive and powerful simulations that cause students to learn factual knowledge needed within specific professions while also emulating the way to think and act within that profession, but with ever present caveat that games do not

replace skillful instruction and that skilled teaching is imperative to their success (Boots & Strobel, 2014).

### ***Gaming for the Earth***

Within environmental education it is believed that teachings of climate change and the environment need to be better spread throughout each academic domain as opposed to being siloed within science (Cloud et al., 2017). Social studies topics that contribute to our understanding of climate change and our potential solutions to our current crisis include, but are not limited to, resource and land management, human consumption habits, human causes of pollution, industrial production and urban development. Modern video games increasingly reflect our ongoing fight against climate change in the narratives that games are centered around as well as game play dynamics that simulate both the causes and solutions to climate concerns (Ouariachi et al., 2019; Chen et al., 2019). Through the lens of semiotic domains, there is a great amount of learning students can reflect upon from simulation style games created for entertainment, and through epistemic games students can gain greater ecological understanding as well as real skills that could help develop eco friendly communities of the future.

Within simulation style games there is often a gameplay centered around resources and resource management. These important lessons on resource management and scarcity can play a large role in teaching students about the balances of growth and resource extinction, and games are now being developed to emphasize just that (Moore, & Yang, 2020). Teaching students about where energy and resources come from alongside the costs to the environment with in-game effects such as pollution and resource scarcity has been linked to an increase in eco awareness. In a study done on the

game *EnerCities* it was concluded that players were immersed in authentic scenarios that helped them see the consequences of their actions immediately in regards to resource consumption and management (Janakiraman et al., 2021). These studies point to potential, where studies on the true effectiveness of gaming towards environmental behavior and motivation are more mixed. Some studies point to environmental themes being strong emotional motivators for action and change (Moore, & Yang, 2020; Ouariachi et al., 2019), while other studies find little to no correlation of digital games increasing student learning motivation and small academic short term gains (Chen et al., 2019). There is once again a lack of cohesion done between the studies where the same games are not being tested, so outcomes should be looked at as preliminary findings and calls for further studies have been made.

### ***Conclusion***

Video games, and specifically simulation style city building games, have been well researched and pointed to as powerful tools for classroom and professional learning. Games do have obvious limitations due to often having to forsake accuracy in the name of game play fun. Instead of this being an impassable roadblock, these inaccuracies or shortcomings can actually be used as analysis and discussion points within the classroom. Additionally there is great potential and early success within the field of epistemic games being used to give players realistic first hand experience within various professional fields, although there are limitations on which professions would be represented and it's unrealistic to expect the development of this style of game to be rapid. This limits the use of these games in the short term to give students a true variety of experiential experiences, although there is potential. Regardless of the style of game being used, or

for what educational or environmental outcome, one thing remains incredibly important, skilled and intentional teaching. Games are powerful tools for students to use in their education, but teachers are the guide who help them use the tools with meaning and purpose. If students are just given the games to be played, it should not be expected to see quality returns. Instead a teacher would still need to develop a well planned and executed curriculum around the use of the game in order to properly untap the potential of said game. The game is the vehicle of which the teacher is instructing through, not the lesson itself.

### **Finishing Thoughts and the Road Forward**

The world is changing and due to technological advances it feels as if that change is happening faster than ever. Education of our students needs to fit the current world as well as preparing them for the future they'll step into. Not only do students need these tools to move forward, but they also want their education to be engaging and meaningful to their lived realities. Video games are tools for instruction when used properly and they have the ability to excite and engage students in learning that covers state standards as well as developing mindsets to combat climate change. To get us there we need more experience with using these tools within the classroom so we can better understand their potential.

What is clearly missing from current academic research around video game use within the classroom and specifically social studies classrooms, is aligned outcomes and measurables. Due to the ever changing landscape of video games there have been multiple studies done on particularly prominent games such as *SimCity*, but mostly there are smaller studies that provide snapshots of different games and smaller study groups.

Furthering the issue is that most studies are not aligned, meaning they look for different outcomes and measure student success or learning gains in different ways. What can be concluded by synthesizing different studies on video games in the classroom is the importance of intentional curriculum design to support video game play, skilled teaching from teachers who understand both content and game play of the game being taught through, and intentional instructional outcomes that students are supported in. This points to video games being a powerful tool within a teacher's tool belt, but not some sort of miracle fix to education. Games themselves can teach players, but without skillful instruction they are closer to a toy than a tool.

This literature review and study should also be viewed as introductory and broad sweeping. Other topics that are incredibly important to address but not yet covered within this review are studies around identity and gaming that relate to gender, sexuality, ethnicity and more on socioeconomic status. Each of these topics deserve considerable consideration and conversation as they are incredibly important pieces of student identity. Additionally more study is needed in regard to equitable education and video games' role as a tool of greater engagement and empowerment. These topics were not avoided and will be addressed in smaller ways throughout the project, but could reasonably be considered for literature reviews and further studies on their own. Lastly this review did not address topics such as video game addiction or perceptions on video game violence. They are worthy topics to be addressed, especially due to negative perceptions that could potentially serve as roadblocks to video game implementation within schools.

In the next chapter it is explained how we can potentially move forward with advocating for the further use of video games within the classroom and therefore gaining

a greater understanding of their educational potential. Essentially teachers need to be provided with more resources that are relatable to the realities of their profession. If we want a greater understanding of what games can do in the classroom we need to be playing more games within the classroom. This can be accomplished by providing teachers with resources that convince them as well as their bosses and parental communities of the real learning concepts and skills accomplished through video games. Giving them game suggestions that are paired with real learning concepts as well as deeper understanding of highlighted games so they can become familiar and do a better job of teaching effectively through those games. Even by convincing the general public that video games hold academic merit would go a long way in clearing the roadblocks of skepticism that stand in the way of video game implementation. No one teacher, school, or district is going to be able to pave the way on their own. Instead by reaching teachers and providing them necessary resources, inspiration, and support we can make video game implementation less rare. From there natural growth of lessons learned can grow into more and more skilled implementations within the classroom. This could all lead to discussions on video games as an instructional tool turning from conversations on potential, to conversations on improvement and mastery.

## CHAPTER THREE:

### Capstone Project Overview

#### Introduction

*How can we use video games to teach social studies, model potential careers, and develop environmental identities within our classrooms?* More needs to be done to untap the potential of video games as a learning tool within the classroom, but we do already know of the many ways in which we learn when we play games, the mindsets games help us develop, and the actions or even careers that engaging with games can lead to. This project's main goal is to advocate for the use of video games as instructional tools within classrooms by highlighting the learning qualities that games provide to players of all ages. Building curriculum takes time and resources from a devoted professional, but it also needs clearance and support from parents, administration, school boards, and of course, additional funding from taxpayers.

Building a website that contains the blend of academic and casual content around gaming was a decision made to reach and inspire as wide of an audience as possible. In the following pages, the project and the goals associated with it will be described in much greater detail, starting with the content of the website. This includes the articles and podcasts created specifically for this project, as well as the content predating the integration of academics on the site. The site's content is supported with research and in depth analysis, which was designed to reach the intended audience. Despite the intended audience being a wide ranging net, a great deal of thought went into who the potential consumers were and why they would care. Explaining and breaking this down was

important because getting curriculum developed and approved involves many moving parts simply to get off the ground, let alone thrive.

Related to but distinct from the intended audience is the methods of which were chosen to reach and inspire them to action. Following a description of who the project aimed to reach is a greater discussion on why the specific content of articles, podcasts, and other media were selected and crafted. This section also includes details on the style or format of the content which was designed with best practice backed by research. From there a timeline is provided to the reader to better clarify how this specific project came together, the wide ranging academic work that went into the project, clarifying the non academic but related media, and charting the future of the website and its intended impact. Lastly before concluding the chapter, the effectiveness and actual outcome of the project are qualified and analyzed. It will be explained how feedback and data around engagement and audience reach and potential impact are being measured and used to reach the desired goal of advocating for video games being used as instructional tools within classrooms.

### **Project description**

My brother and I created a website called LowFiveGaming.com that houses our video game themed podcast of the same name. Over the last few years we've brainstormed what the site could be and the type of content that it would house. Essentially this project is both a part of that site and its own separate entity within the site. In trying to reach both a professional audience of teachers, as well as avid gamers who may have school aged children, we put within the site an education focused section that has clear signposting for content more grounded in academic work. This is done so

when someone searches for educational video games or video game learning, they'll be brought to that specific content, as well as giving said content more validity by not being immediately next to more light hearted and commercial content. The academic content within the site includes an introductory video blog and script that is a reconstruction of chapter one from this paper. The intention behind that is to give the reader context as to who I am, the goals of the academic focused work, as well as lending validity to my work given that it is all tied to years of teaching experience, graduate school, and professional development. The idea to make it into a video blog was in an effort to offer multiple forms of media engagement. Video essays or video blogs are a popular form of media that can pull in a wider audience than written work alone. This video blog and accompanying script are anchored at the top of the webpage and lead into the rest of the works including more written work and podcasts.

The written academic work falls under a few categories that build off of one another. The first article is centered around semiotic domains and the principles of active learning. Within the article specific games are highlighted or recommended for how they exemplify the learning concepts covered in addition to rational for their use in school. Accompanying the article is an embedded audio file, or smaller podcast with my LowFive co host Alex. This serves as an extension or further engagement of the concepts covered within the article. It was outlined and designed to give the audience more information in another form of media. It also helps bring in a more casual audience in addition to the more teacher focused conversations as Alex can bring in his own unique perspective. Following this lead article are three more similarly structured articles and audio file companions. The first two are focused on explaining video games potential to

teach through and to identity, while the third is all about job modeling and epistemic gaming. All articles also come with specific game recommendations that are best suited for successful classroom implementation. The final article is Titled “Six Things to Keep in Mind When Gaming for Class.” The idea is that a teacher hoping to use video games within their classroom will need a solid game plan.. The article takes several of the most important findings from the academic works on the effectiveness of video games within the classroom from my literature review and delivers them in a digestible and accessible manner.

Lastly the site will have a full hour long podcast that centers around the game *Cities Skylines*, of which a great deal of the project’s written content is focused on. The podcast introduces the game, explains its academic merits within school, and then goes into great detail on its potential and ways of which it can be used to teach human geography, city planning, and urban development. The podcast serves as a bridge from an already cultivated audience that predates this project, as well as bringing along an academically focused audience, both of whom will be given significant reason to further explore and engage with the rest of the project online.

### **Audience**

In order to effectively teach with video games in the classrooms, three distinct but interrelated groups need to be reached. First teachers need to feel comfortable and confident in teaching through the medium of video games. Second is administration or the hierarchy within schools who make administrative decisions. They would have to understand the merits of teaching through video games and be supportive in implementation. The last but perhaps most important group to meet would be parents

who through voting, advocacy, and tax paying yield important autonomy over their children's education. A majority of the project's content is aimed directly at teaching professionals, with the intention of them being advocates to the other groups mentioned.

Teachers are the curators of student learning content. As previously discussed in chapter two, video games are an instructional tool made effective primarily through intentional and effective teaching practices (Devlin-Scherer & Sardone, 2010; Watson, Mong, & Harris, 2011; Lee & Probert, 2010; Squire, 2005). The idea behind this project is to inspire and equip teachers with information needed to use video games within their own classrooms. Due to the incredibly diverse variables that each teacher has to account for within their unique school, it was not practical to design a one size fits all approach to getting video games within classrooms. Schools within the same district can take wildly different approaches, and things become less and less aligned as you go from district to district and then state to state. In many cases it might be most practical for a teacher to design an after school program or elective class. With this in mind, the project was designed to once again inspire and validate the approach of teaching through video games to educators who then can prepare pitches to their administrative bodies or apply for grants to receive the proper hardware and software.

Administrators and school boards love to see data when making large scale decisions to validate their rational, but many of the games being developed are new, and unfortunately data on student learning through video games within the classroom is still harder to come by and not as easily measured as standardized testing or other tried and true methods of effective teaching. Additionally, although video games are increasingly culturally ubiquitous, it is unfair to assume that a majority of teachers have good

familiarity and comfort around playing video games. Many non-gaming adults are aware of video games, but have negative, or at the least, non academic connotations to video games. This is why much of the project focuses on taking strong academic work around video games and teaching it to a more general audience while also connecting the concepts to specific games and their strong ties to learning standards. This is also incredibly important when communicating with parents who send their students to school with the expectation of academic rigor.

Video games have been prominent for long enough that many parents and grandparents have far more experience with gaming than generations of the past, but that doesn't mean they've been exposed to the academic merits of gaming and they may in fact be one of the larger barriers to having games within the classroom. This is why much of the project also focuses on a more general audience and why much of that content highlights the learning concepts that guided play can have when gaming from home recreationally. The main goal of the project is to see video games being used within classrooms, or as educational tools within schools, so focusing on the parents and game playing audience at home may seem like a diversion. In reality, validity at home trickles into the classroom. By getting gamers and parents of gamers to see the potential in video games as learning tools, even at home, there is no longer such a barrier of overcoming negative associations or mindsets around video games. If a school board member and/or the parent of a school age student starts to see how their child's love of city building and urban development is being cultivated at home through playing *Cities Skylines*, they will be far more receptive to a 9th grade human geography teacher pitching the idea of using

the game within class for a unit, or perhaps starting an after school program for kids just like said student.

### **Academic Foundation**

The biggest academic themes that will be presented within this project are the value of video games in teaching through identity, epistemic gaming, and learning through semiotic domains. Each of these lenses have been well researched and will be used to solidify gaming's potential within the classroom as well as helping the general audience understand the learning potential of entertainment focused games. Multiple studies have provided a framework that proves games can be used for learning even in a casual or entertainment focused setting (Squire et al. 2005; Young et al., 2012; McGuire, 2015; Stapleton, 2015). What's more powerful is when gaming is paired with skilled teaching, which has been shown to be an exciting tool for effective engagement (Devlin-Scherer & Sardone, 2010; Watson, Mong, & Harris, 2011; Lee & Probert, 2010; Squire, 2005). This serves as a foundation for the project's academic merit and well as the direction of the project. As previously mentioned the goal is to get games within the classroom, but a large step towards that goal is further validating the educational potential of video games to the wider public.

### **Timeline**

This project has been cultivated since shortly after I began my masters at Hamline the Summer of 2020. Its earliest form began when I started classes in the summer with my new laptop that I would also play games on after I was done with classwork for the day. Concepts around environmental learning and/or teaching concepts would spill into my mind as I played games and I began to see said games as a legitimate avenue to relate

and expand upon them. I started taking little notes and selecting specific games that I thought would reach and teach different social studies topics. I started a podcast and website with my brother about video games in the Winter of 2021. This wasn't intended to be integrated with my project at the time, but eventually became the home and platform to the project. This is primarily because the site and podcast have a growing listener base and therefore my project would be launched with a built in audience, leaving less work around promotion.

The project will be officially launched in August of 2022 with the blog content previously mentioned that is aimed to introduce the author and the project at large. From there articles were/will be published weekly (or bi-weekly) through the next several months. The academic content was written and published first and with higher priority. These articles contained smaller "companion podcasts," which allows the reader to dig a little deeper into the content or take in the information in another medium. Before moving on to the more casual focused content, a large mainline entry podcast for the month of August is going to be published focusing on the game *Cities Skylines*, that serves as a bridge between the casual and academic work.

The academic focused content associated with this project will conclude around December. What follows from there will be a heavier push to publish more casual and entertainment focused content. The academic focused section will still be added to over time with new publishing as other academic works come out that inspire new conversations or new games are developed that are believed to fit the learning concepts covered and promoted by this project.

## **Assessment**

Once the academic portion of the website is officially launched and articles begin to be published the assessment of the project will be formally underway. The two main ways the project will be assessed are data and outreach, or communication. With data the site is set up to collect numbers on how many visits each article has received and the number of downloads or listens the podcast has. For outreach and communication there will be an email to reach out to within each published article, as well as various social media addresses associated with the site. Communication with professionals or curious individuals will be recorded and saved. The idea is to inspire a community working towards video games as an educational tool implementation. The best way to cultivate said community is to reach out and have conversations with people over time. They can bring in new ideas or support. Hopefully from this we'll see proposals being made to use games within the classroom, electives on simulation games, or after school clubs. The site will specifically ask that anyone who does successfully implement video games within the classroom, social studies or not, keep in touch with the promise of highlighting those efforts in an article post, podcast shout out, or social media activity.

## **Summary**

Video games and social studies have been two separate but always related influences within my life. This project's purpose is to validate that connection and share it with future generations of students. One teacher cannot change the practices of schools across the nation, but by working together and taking small steps we can see more video games being used as a tool of engagement. Beyond just making classes more fun, video games hold the potential to further engage our students in experiences previously

unavailable. With these tools we can take students back in time or to the future, build cities or run them, and in the process give them a chance to see themselves within a new light. Teachers need more information and resources in order to start changing the way classes are taught. This project starts the conversation and hopefully provides teachers with a road map moving forward. Even if more casual gamers are brought along to the idea that games are valid learning tools, it would be viewed as a success as a potential barrier to the classroom has been lifted.

## CHAPTER FOUR:

### Conclusion

#### Introduction

Through a lifetime's positive relationship between video game play and social studies learning, I was drawn to the research question of *How can we use video games to teach social studies, model careers, and develop environmental identities within our classrooms*. The purpose for this capstone project was to advocate for the greater use of video games as instructional tools within classrooms. By educating both education professionals and school age parents on the learning potential that video games hold when used as an educational tool, I hope to inspire a greater understanding and use of video games within the classroom. The message of the project was delivered through the website [Lowfivegaming.com](http://Lowfivegaming.com) in a series of articles, video, and podcasts.

In researching video game use within the classroom, I had concluded that although most research was optimistic and pointed towards great potential, not enough experience or actual implementation had taken place. This led to results being inconclusive as different games were tested with results being measured in different ways. The project takes the many academic concepts associated with video game play and relates it to a general audience alongside recommendations of games that serve those principals. More experimentation and implementation needs to be done in order to fully realize the potential of video games within the classroom, so by advocating for their use and helping set up teachers with sound reasoning and instructional plans, we may find greater success.

The following chapter covers in more detail the major learnings from the project overall before revisiting the literature review and the research foundational to the project. From there the potential and desired implications of the project are visited but also weighed against the knowledge limitations. With the research done for the project as well as the implications and current limitations in mind, specific considerations for future research are given and explained and I discuss how the project will be distributed and measured. Before concluding, space is given to expanding upon what I believe the professional impact of the project is both direct and indirectly.

### **Major Learnings**

Research for this project validated some of my long held beliefs in the relationship between video game play and learning, while also expanding what I thought was possible in using video games for academic purposes. Prior to officially researching for my project it felt as if the topic of video games being used in the classroom was practically non-existent. Not once in my six years of teaching was it brought up or even hinted at within professional development, nor had it even been touched upon in my undergrad or graduate course work. This led me to being surprised by the breadth and depth of research available on video games being used for educational research spanning back decades. Although there were many resources to go through, my ability to organize and synthesize research was quickly tested. There are many academic works done on video games, but there isn't a lot of cohesive organization or common direction. This could be said for the learning outcomes or effectiveness being measured, as well as the games being used within the studies. There were a lot of materials for me to use, but it

was going to be a challenge to piece them together into a digestible narrative to a general audience.

As a writer my goal was to build a bridge between two very different audiences. My research and writing for the academic foundation or validation of my project come from the academic world of peer reviewed journals and scholarly books not always intended for a general audience. These works are not always easily digested and once again they often have a very narrow and specific focus non aligned with other works related. Additionally if you look at the domain of video games, it too is an incredibly large and complex world of its own that has unique terminology, references and understandings that are both shared and unique to individual subgenres. In setting out to explain the academic merit and learning principles of video games to a general audience, as well as relaying the complexities of various video games to those who may or may not play them, I often had to seek help and ask for perspectives outside of my own. I learned that my experiences as a teacher and video game player made me somewhat of an authority on a lot of subjects given the unique perspective, but I also was pushed to see things from an audience perspective that can not rely on the same experiences to understand specific references or understandings related to my profession or the video game landscape. I had to learn to trust myself while leaning on others at the same time.

At the completion of the project, I've discovered different ways to look at learning from video games that also transfer to different domains and methods of learning. In seeking to prove or validate how video games can be used for learning, I gained greater understanding on what leads to learning and important factors related to successful implementation. For example a great deal of my work in understanding how

video games can help us learn, centers around semiotic domains and identity based learning. These concepts help articulate the potential of video games being used for learning, but are also instructive to understanding students, their learning, and the needs of a classroom. Furthermore research often pointed to the need for effective teaching, planning, and implementation when teaching through video games. This validates the idea that video games are effective tools that teachers need to teach to and through, as opposed to thinking they are something which can just be quickly implemented for great success.

### **Revisiting the Literature Review**

The largest voice within my research can be attributed to James Paul Gee, and specifically his book *What Video Games Have to Teach Us About Learning and Literacy*. From his work I was heavily influenced by his concept of semiotic domain learning, and his ideas in the book on identity within gaming were a large jumping off point for further research. As previously mentioned, academic works on video games are often disconnected from one another by overall focus and/or focus of game being studied (Young et al., 2012). Although I could find quality work done on video game use within classrooms, finding cohesive direction was difficult. Gee's work inspired some of my groupings and led to more successful future research. This being said, Gee's book was published in 2003 and revised in 2007. Fifteen years is a long time and his video game references within a majority of his work feel outdated and irrelevant to today's students. This led me to taking his concepts and what he had found with prior games, and modernizing them with newer titles and therefore my own expertise.

Related to but distinct from the influence of Gee, is the many works I cited from the University of Wisconsin's David Williamson Schaffer, as well as the book *The Civic Potential of Video Games* by Joseph Kahne, Ellen Middaugh, and Chris Evans. These works took ideas around identity but expanded them to specific contexts I covered such as career or professional learning and civic identity. Most of Shaffers work was done within the range of 2000-2010 and the book on civic potential was published in 2009. Once again they provided great ideas and academic merit, but due to the intensely fast pace of video game growth in that time, needed modernization in regards to referenced video games and even the idea that games could hold even more potential now given greater technological capabilities.

Given the large scope my project took on covering the three lenses of social studies concepts learned from video games, career exploration or modeling, and developing environmental identity, I relied heavily upon meta analysis within those domains. Many lessons were learned, but the most profound impact to the project was the implication from multiple sources on the importance of solid teaching practices in order to gain understanding through video games. (Devlin-Scherer & Sardone, 2010; Watson, Mong, & Harris, 2011; Lee & Probert, 2010; Squire, 2005) This concept greatly helped shape the direction of my project and associated messaging. To me it felt as if the research was pointing towards the need to greater familiarize teachers with video games capabilities. More needs to be done in learning how to effectively use them and we'll need far more experience in ground floor implementation in order to see that realized.

There has been a good amount of research attributed to social studies learning and career relationship to video games dating back to the early 2000's, but I was surprised by

how much of the modern work being done around video games being used within schools is in regards to environmental teaching or pro environmental messaging. This is something positive that can be attributed, in my opinion, to increased awareness and concern for the environment undergoing human caused change. Looking forward I expect to see more academic work focused on environmental themes and the desire to teach them through video games could in fact be the most effective way to introduce learning through video games within our schools. The recency of the research on the environment done for this project sticks with me heavily and potentially provides inspiration and a roadmap for future works attributed to the project's website.

### **Implications and Limitations**

I look at the research and written work for this project as a strong foundation of which to build off of. I sought to find a smoking gun of evidence that definitively said, yes here is why video games are effective tools of instruction. Instead I found many positive arguments and sound instructional concepts associated with video games as instructional tools, but they lack a common narrative or cohesion. This led me to creating said foundation based on advocating their potential by creating what I hoped were engaging resources that were digestible for a general audience. In my profession I've found myself not being a teacher, as much as a translator. I research, curate, and filter information down into means of which my students can engage and utilize the information in their lives. I took a similar approach to this project in the sense where I wanted my audience to be inspired by the material and take the foundation of what I laid out and build upon it.

From this foundation teachers, including myself, could take many of the suggested games and instructional lenses of which to teach them through, and begin to

develop lesson plans to successfully implement them through. Much of the groundwork has been laid out to help convince administrators or student parents on the validity of teaching through the games, so from here the teacher's attention can be more focused on creation of teaching methods, and hopefully the sharing of them back into the greater education community.

Familiarity, comfort and acceptance of using casual or entertainment focused video games as instructional tools will still be low. By implementing them a teacher will still be a bit of a pioneer so to speak. This points to alternative classes or methods of teaching such as elective classes, after school clubs, or summer school programming being more realistic options to begin the process.

There is also the matter of costs and technological capabilities. Each school has different funding realities and not all have the physical space for computer labs or the funding for the actual computer hardware or video game software. Getting administration on your side once again will be crucial as you may need to seek additional funding or grant proposals. Smaller and specialized classes such as electives may once again be important due to the teacher needing to have greater understanding of the video game being taught through. At no point would I recommend trying to teach through a game without strong familiarity with that game. This is admittedly no small barrier as teachers are an incredibly diverse workforce with a large variance of technological capabilities and/or comfort.

Despite barriers of entry and limitations of video games being used as instructional tools, I still believe that if properly implemented, they carry great weight in inspiring and engaging students. Like anything new it will take some time to iron out

issues and develop effective commonly used practices in both teaching teachers how to utilize the games, as well as teaching students through the games.

### **Future Research**

This project was very broad and wide ranging. Its focus was on the validity of teaching through video games, leading into the slightly more narrow focus of using video games for teaching social studies concepts, career development or inspiration, and the development of environmental identity. With my wide scope I missed important subjects that do deserve more time and future study, specifically around greater research on how teaching through video games could engage minority populations and achieve greater equitable progress.

Aside from the studies done on environmental concepts and messaging, there does appear to be a need for more modern research on social studies teaching within gaming using more modern games as their focus. Many of the studies done are on games that students would no longer be interested in and more importantly, have been surpassed technologically. I believe there are games now that may hold greater potential and create greater educational gains. The more current focus on environmental messaging and teaching concepts in games is encouraging and points to the subject having greater interest and perhaps a larger impact. Within my project, specifically within a podcast on environmental identity, I pointed out some games being developed that I was excited for due to both the playability of the game, but also the clear pro environmental messaging I was perceiving both from direct marketing and what I could surmise from trailers. If games like these are successful they may create a greater market for similarly minded

games with pro environmental ethics, which creates more interest, analysis, and potential with classroom use.

### **Communicating Results**

Data from the website will be collected reflecting total reach in regards to site visits for each article and downloads or listens for each podcast automatically. Within the site directly, associated social media accounts, and an associated email account to the website are various methods of which community feedback and/or participation can be cultivated. The plan is to interact as much as possible and catalog said communications within a Google Drive. Marketing for the website and project will be done through personal social media accounts, social media accounts associated with the website, and through professional networking. I've had colleagues look over various works during production and have preliminary plans to develop curriculum. Future works on the project site will also be added that are not affiliated directly to my M.A. at Hamline and therefore may take different directions in regards to marketing and measured reach such as sales number, donations or article contribution from outside sources. Said future works will be directed both by personal passion as well as directly resulting from community feedback. If particular topics have the highest level of engagement they will be further explored and covered within the site. Additionally if there are topics not covered that are called for, they would be natural points of motivation towards future work and/or research.

### **Benefiting the Profession**

There are ways that I believe this project could directly and indirectly benefit the profession of teaching or education. I believe that if the project were to inspire and help

develop the use of video games as educational tools, that we would be increasing student engagement and inspiration. More than anything I'm hoping that students can have a bit more fun and freedom within their schooling life in a way that still holds academic merit and enriches their lives. Video games hold unique potential that I believe are important in bringing into the school in order to model different careers, develop different skills, or at least differentiate teacher methods of delivery. The smallest impact could be that students might have a better relationship with their education. A larger potential impact could be that diverse ranges of students are being equipped with tools and inspiration of which to benefit themselves and the communities of which they live in.

Even if this project doesn't change the way things are done within schools, I still set out to challenge and change the perception that video games are purely for entertainment. We hope to reach a wide audience that includes video game enthusiasts. They may be or become parents so the impact could circle back to being direct, but the idea that video games are a non valid form of educational media is incorrect. More people should know of the potential around video games to learn and hopefully this project changes that.

## **Summary**

At the start of this project I knew I wanted to validate my belief that video games could and should be used as instructional tools within schools. In the previous pages of this chapter I have highlighted my most profound learnings personally in addition to the academics and their works that had the largest impact upon my research. From my research I weighed both the greater academic implications as well as the limitations of what I had learned and what I had created through the project. This led into my

recommendations for future research and works created by either myself or other passionate individuals. Hopefully through the communication and distribution of my project laid out above I can see the desired benefits to the profession that I believe my project will set out to accomplish. Creating the articles and podcasts for the project were no small endeavor, but hopefully my passion on the subject as well as lessons I've learned along the way shine through for fellow educators. At the very least I hope that more conversations can be had on the potential video games hold in regards to how much players can learn through them.

## REFERENCES

- About*. Social Studies. (n.d.). Retrieved May 3, 2022, from <https://www.socialstudies.org/about/about>
- Akkerman, S., Admiraal, W., & Huizenga, J. (2009). Storification in history education: A mobile game in and about medieval Amsterdam. *Computers & Education*, 52, 449–459. doi:10.1016/j.compedu.2008.09.014
- Annetta, Leonard, A. “Video games in education: Why they should be used and how they are being used.” *Theory Into Practice* 47, no. 3 (2008): 229–39.
- Beckett, & Shaffer, D. W. (2005). Augmented by Reality: The pedagogical praxis of urban planning as a pathway to ecological thinking. *Journal of Educational Computing Research*, 33(1), 31–52.  
<https://doi.org/10.2190/D5YQ-MMW6-V0FR-RNJQ>
- Bereitschaft. (2016). Gods of the city? Reflecting on city building games as an early introduction to urban systems. *Journal of Geography (Houston)*, 115(2), 51–60.  
<https://doi.org/10.1080/00221341.2015.1070366>
- Boots, & Strobel, J. (2014). Equipping the designers of the future: best practices of epistemic video game design. *Games and Culture*, 9(3), 167–181.  
<https://doi.org/10.1177/1555412014536631>
- Brad M. Maguth, Jonathan S. List & Matthew Wunderle (2015) Teaching social studies with video games. *The Social Studies*, 106:1, 32-36, DOI: 10.1080/00377996.2014.961996

Chen, Yang, C.-H., Huang, K.-S., & Fu, S.-L. (2019). Digital games for learning energy conservation: A study of impacts on motivation, attention, and learning outcomes. *Innovations in Education and Teaching International*, 56(1), 66–76.

<https://doi.org/10.1080/14703297.2017.1348960>

Clayton, S. (2003). Environmental identity: A conceptual and an operational definition. In S. Clayton & S. Opatow (Eds.), *Identity and the natural environment: The psychological significance of nature* (pp. 45–65). MIT Press.

Cloud, Jaimie P., ed. "Education for a sustainable future, benchmarks: For individual and social learning ." *Journal of Sustainability Education* (2017): 1-66. Web

Collett. (2020). Researching the complex nature of identity and learning: positioning, agency, and context in learners' identities. *International Journal of Qualitative Studies in Education*, 33(5), 524–548.

<https://doi.org/10.1080/09518398.2019.1687955>

Crowley, Silk, M. J., & Crowley, S. L. (2021). The educational value of virtual ecologies in *Red Dead Redemption 2*. *People and Nature* (Hoboken, N.J.), 3(6), 1229–1243.

<https://doi.org/10.1002/pan3.10242>

Day, Suzanne. 2012. "A reflexive lens: Exploring dilemmas of qualitative methodology through the concept of reflexivity." *Qualitative Sociology Review* 8(1):60-85. May, 2022 ([http://www.qualitativesociologyreview.org/ENG/archive\\_eng.php](http://www.qualitativesociologyreview.org/ENG/archive_eng.php)).

Devlin-Scherer, R., & Sardone, N. B. (2010). Digital simulation games for social studies classrooms. *Clearing House*, 83, 138–144. doi:10.1080/00098651003774836

English language arts standards " history/social studies " grade 6-8. English Language Arts Standards " History/Social Studies " Grade 6-8 | Common Core State Standards Initiative. (n.d.). Retrieved May 4, 2022, from <http://www.corestandards.org/ELA-Literacy/RH/6-8/>

Fisher, Yoh, N., Kubo, T., & Rundle, D. (2021). Could Nintendo's Animal Crossing be a tool for conservation messaging? *People and Nature* (Hoboken, N.J.), 3(6), 1218–1228. <https://doi.org/10.1002/pan3.10240>

Gaber. (2007). Simulating Planning: SimCity as a pedagogical tool. *Journal of Planning Education and Research*, 27(2), 113–121. <https://doi.org/10.1177/0739456X07305791>

Gee. (2007). *What video games have to teach us about learning and literacy* (Rev. and updated ed.). Palgrave Macmillan.

Heath, C., and D. Heath. 2010. *Switch: How to change things when change is hard*. New York: Broadway Books

Jacobson, & Mustafa, N. (2019). Social identity map: A reflexivity tool for practicing explicit positionality in critical qualitative research. *International Journal of Qualitative Methods*, 18, 160940691987007–. <https://doi.org/10.1177/1609406919870075>

Janakiraman, Watson, S. L., & Watson, W. R. (2021). Exploring the effectiveness of mixed methods study in India. *TechTrends*, 65(3), 331–347. <https://doi.org/10.1007/s11528-020-00571-8>

- Kahne, Middaugh, E., Evans, C., & Evans, C. (M. C. (2009). *The civic potential of video games*. MIT Press.
- Kim, & Shin, J. (2016). The Pedagogical benefits of SimCity in urban geography education. *Journal of Geography (Houston)*, 115(2), 39–50.  
<https://doi.org/10.1080/00221341.2015.1061585>
- Lee, J. K., & Probert, J. (2010). Civilization III and whole-class play in high school social studies. *Journal of Social Studies Research*, 34, 1–28.
- Moore, & Yang, J. Z. (2020). Using eco-guilt to motivate environmental behavior change. *Environmental Communication*, 14(4), 522–536.  
<https://doi.org/10.1080/17524032.2019.1692889>
- Ouariachi, Olvera-Lobo, M. D., Gutiérrez-Pérez, J., & Maibach, E. (2019). A framework for climate change engagement through video games. *Environmental Education Research*, 25(5), 701–716. <https://doi.org/10.1080/13504622.2018.1545156>
- Pollard, & Filer, A. (2007). Learning, differentiation and strategic action in secondary education: analyses from the identity and learning programme. *British Journal of Sociology of Education*, 28(4), 441–458.  
<https://doi.org/10.1080/01425690701369400>
- Reichert, & Print, M. (2018). Civic participation of high school students: the effect of civic learning in school. *Educational Review (Birmingham)*, 70(3), 318–341.  
<https://doi.org/10.1080/00131911.2017.1316239>
- Shaffer. (2006). *How computer games help children learn*. In Palgrave Macmillan.  
Palgrave Macmillan. <https://doi.org/10.1057/9780230601994>

Shaffer, Squire, K. R., Halverson, R., & Gee, J. P. (2005). Video games and the future of learning. *Phi Delta Kappan*, 87(2), 104–111.

<https://doi.org/10.1177/003172170508700205>

Shepardson. (2019). Students' conceptions of and feelings about land use: Building a conceptual framework for teaching and learning about land use. *Journal of Geography (Houston)*, 118(6), 252–265.

<https://doi.org/10.1080/00221341.2019.1593487>

Silk, Correia, R., Verissimo, D., Verma, A., & Crowley, S. L. (2021). The implications of digital visual media for human–nature relationships. *People and Nature (Hoboken, N.J.)*, 3(6), 1130–1137. <https://doi.org/10.1002/pan3.10284>

Social Studies. (n.d.). Retrieved May 3, 2022, from

<https://education.mn.gov/MDE/dse/stds/soc/>

Squire, Giovanetto, L., Devane, B., & Durga, S. (2005). From users to designers: Building a self-organizing game-based learning environment. *TechTrends*, 49(5), 34–42. <https://doi.org/10.1007/BF02763688>

Squire, K. D. (2005). Changing the game: What happens when video games enter the classroom? *Innovate: Journal of Online Education*, 1(6). Retrieved from <http://www.innovateonline.info/index.php?view=article&id=82>

Squire, Kurt, and Henry Jenkins. “Harnessing the power of video games in education.” *Insight 3*, no. 5 (2003): 4–33.

- Stanford History Education Group. (2018). Multiperspectivity: What is it, and why use it? Teachinghistory.org. Retrieved May 3, 2022, from <https://teachinghistory.org/teaching-materials/ask-a-master-teacher/23610>
- Stapleton. (2015). Environmental identity development through social interactions, action, and recognition. *The Journal of Environmental Education*, 46(2), 94–113. <https://doi.org/10.1080/00958964.2014.1000813>
- Tavinor, Grant (2008) "Definition of videogames," *Contemporary Aesthetics (Journal Archive)*: Vol. 6 , Article 16.
- Watson, W. R., Mong, C. J., & Harris, C. A. (2011). A case study of in-class use of a video game for teaching high school history. *Computers & Education*, 56, 466–474. doi:10.1016/j.compedu.2010.09.007
- Young, Carsten Conner, L. D., & Pettit, E. (2020). “You really see it”: environmental identity shifts through interacting with a climate change-impacted glacier landscape. *International Journal of Science Education*, 42(18), 3049–3070. <https://doi.org/10.1080/09500693.2020.1851065>
- Young, Slota, S., Cutter, A. B., Jalette, G., Mullin, G., Lai, B., Simeoni, Z., Tran, M., & Yukhymenko, M. (2012). Our princess is in another castle: A review of trends in serious gaming for education. *Review of Educational Research*, 82(1), 61–89. <https://doi.org/10.3102/0034654312436980>