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VIDEOGAMES AS A PLATFORM FOR LEARNING. SELF-CASE STUDY: THE VIDEOGAME NEVER ALONE

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Faculty of Education **Thesis abstract**

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Abstract

The themes of this thesis are videogames and learning. More specifically, what educators ought to know about videogames and their utility in carrying out educational initiatives. Videogames are a defining medium of the 21st century. However in comparison to books, film, and print media, videogames are often overlooked as viable platform for educational initiatives. This is partially due to the fact that since the emergence of videogames in modern mainstream media, the platform has mainly been used for entertainment purposes.

The thesis mainly explores mainstream videogames beyond entertainment media and examines how the platform can foster learning for various educational initiatives applicable to 21st century learning. The initiative this thesis focuses on in particular is cross-cultural learning because in an increasingly globalized society, increasing intercultural competencies and cultural awareness is an imperative initiative of 21st century education. Therefore this thesis starts by generally exploring videogames as learning platforms and then the research portion of the thesis how a particular mainstream videogame can foster cultural learning.

The first question addressed in this thesis addresses is what educators ought to know about mainstream videogames. A chapter titled "Videogames and Learning" is dedicated to exploring this question. The conclusions of this chapter suggest two things. First that videogames as they currently exist are built on solid learning principles that allow the player to independently learn the internal design grammar of the videogame they're playing. Knowing these principles and seeing how they operate/ function in videogames is useful to educators because it reveals inherent truths about how human beings learn. Implementing these learning principles in classroom curricula or even lesson plans can increase good learning potential.

The second conclusion of this chapter expresses that videogames can serve as a platform that fills the gaps of modern education. Videogames and their vast capabilities can perform as semiotic domains which link information to its corresponding practice. For instance, students can learn about information of space travel and apply that information in a videogame that allows the player to manipulate the variables of space travel, thus allowing for better learning.

Using this conclusion, the author then performed a case study which addressed the question of how videogames can serve as a platform for enhanced cross cultural learning in the 21st century. To explore this question, the author conducted a self-case study by assessing her learning experience playing the videogame, *Never Alone*, a mainstream game that aims to shed light on a marginalized culture in Alaska through a cultural narrative. The author had never previously encountered this culture and had no specific knowledge of this culture prior to playing the game. The goal of the case study is to determine what this case can demonstrate about videogames as platforms for cultural learning. In assessing her experience, the author uses David Kolb's (1984) four-part learning theory which claims that learning takes places when 4 actions have been carried out: experience, observation/reflection of that experience, conceptualization, and application. The conclusions of the case study suggest that videogames can be a viable platform for cross cultural learning granted that each part of Kolb's model is carried out. In other words, the simple act of playing the game is not enough. One must carry out all steps of Kolb's model to construct a cultural learning experience. It also suggests that any educator attempting to use a mainstream, narrative-based videogame as supplementary media to a lesson must implement reflection, conceptualization, and application practices in order to construct a learning experience out of a videogame.

However, the reliability of this case-study can be questioned due to the fact that the researcher performed the case-study seeking a learning experience, the researcher herself is highly interculturally competent, and the accuracy of the cultural conclusions the researcher made about the videogame is not confirmed.

Keywords cultural learning, experiential learning, games, identity, literacy, media literacy, semiotic domains, videogames

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LIST OF SYMBOLS AND ABBREVIATIONS

GCE – Global Citizenship Education

RPG – Role Playing Game

I. INTRODUCTION

Twenty-first century educators are challenged with creating and/or reshaping institutions that foster cross-cultural learning as means of partially meeting the reality of globalization. In fact, the major global players in education have developed educational frameworks addressing the inevitable reality of an increasingly globalized society. A big topic in education is Global Citizenship Education (GCE) – an initiative that expands education beyond the scope of national boundaries to address the global challenges of the twenty-first century. GCE is a prevalent discourse in modern education, having much literature and scholarly debate dedicated to the subject.

However, this thesis is not focusing on GCE, rather it is focusing on what the prevalence of GCE reveals to modern educators; that is the challenge and importance of creating supranational education even within national contexts. Within supranational education, this thesis is looking at cross-cultural learning. This specific type of learning is commonly defined and practiced as having students engage with cultures other than their own. It is believed to be a form of "learning by doing", through activities such as community engagement, foreign internships, and even studying abroad.

However, specifically for this work, I am examining cross-cultural learning as characterized by one particular GCE aim by UNESCO, "[GCE aims to] support learners to revisit assumptions, world views and power relations in mainstream discourses and consider people/groups that are systematically underrepresented/ marginalized" (United Nations Educational, 2014).

This thesis will explore the question of utilizing videogames as an educational platform for this sort of cross-cultural learning. In doing so, I intend to address this question by reviewing the game *Never Alone*. This particular game has received much praise in its efforts to shed light on a marginalized culture in Alaska. Therefore, I will use this game as a case to address my research question.

1.1 Videogames

Videogames are relatively new media in comparison to books, television, and other traditional media. Its massive popularity offers insight to the appeal that interactive gaming has on people. However, video gaming, especially in the context of children and adolescents has received a generally bad reputation among parents and the education community (Newman, 2008, p. 5). As explained in section 2.2.2*,* this is mainly due the correlational evidence between violent videogames and violent behavior seen in mainstream gaming (Nielsen, Smith, & Tosca, 2008, p. 222) (Anderson C. A., 2001). Also its seemingly addictive nature is vastly considered to be a waste of time (Newman, 2008, p. 5). However, this thesis will argue that since videogames are a relatively new medium, they are widely misunderstood by the current, and older generations that still have an active role in education and learning. Also I argue that videogames have massive potential for educational initiatives. In doing this, I explore the question of the viability that videogames can have as a cultural learning tool.

Videogames, similar to books and movies, offer something universal to human-beings – story telling. However, unlike other media, players can assume the identity of a character, and interact as that character in world with different values and conventions from reality. Therefore, when looking at gaming, I see huge potential to explore, assume multiple identities and engage with foreign frameworks all of which are crucial in cross-cultural education.

1.2 Never Alone

Never Alone, although independently created, is still considerably a mainstream game. It was not created by any formal education institution, yet was created with non-formal educational initiatives in mind. The game has received much praise in its efforts to shed light on a marginalized culture in Alaska.

A description of the game by the game makers, *Upper One Games*: "We paired world class game makers with Alaska Native storytellers and elders to create a game which delves deeply into the traditional lore of the Iñupiat people to present an experience like no other" (Never Alone Game).

1.3 Research questions & objectives

The goal of this thesis is to evaluate videogames as a platform for learning by conducting a thorough literature review and exploring the game *Never Alone*. The target audience for this work is educators, i.e. administrators, developers, teachers, and even parents.

Primary Research Question:

Using the game *Never Alone* as an example, how can videogames be used as an educational platform for enhanced cultural-learning?

To answer this question, I first conduct a literature review on the topic of videogames and address the following sub-questions:

1. What is gaming and more specifically what are videogames?

2. What does existing literature tell about the educational value of videogames and what requires further research?

3. What should educators know about videogames?

Since the research of this thesis is a self-case study in which I, the researcher evaluate my own learning experience playing the game, *Never Alone,* it is important to address my own frame of reference about the gaming content, before evaluating the case itself. I use David Kolb's (1984) model of experiential learning to analyze the case.

The goal of this is to see what the game *Never Alone* can teach educators about implementing cross-cultural learning initiatives in videogaming?

1.4 Scope of research

The scope of this thesis assumes that cross-cultural learning is a forefront initiative for modern educators. It also assumes videogames is a relatively "untouched" or "untapped" media in education, meaning that in comparison to books and films, educators in general, have not yet fully implemented videogames as a medium for learning initiatives. The final assumption of this thesis is that mainly formal educators (i.e. developers, teachers, administrators) and parents would find the information of this thesis topical.

While there are various types of gaming, this thesis will focus on two main areas of gaming that are common in home settings: 1). Console gaming 2.) Computer gaming (this is not including gaming apps for mobile phones/devices). Most of my videogame references will be centered on mainstream action/adventure games for consoles like Playstation, Xbox, and Nintendo.

Another theme that appears in this thesis is cross-cultural learning. This topic is considerably vast and therefore must be further concentrated for the sake of this thesis. Therefore, I consider cross-cultural learning as an initiative in supranational education that intends to shed light on underrepresented or marginalized cultures/groups of people, while encouraging students to revisit assumptions about power dynamics in society.

Lastly, this research in mainly exploring how videogames can be implemented in formal education and ideally in tertiary education as additional media to textbooks and film.

1.5 Placing this thesis within existing literature

This thesis exists within the realm of an emerging field in humanities: interactive media and videogames as an artistic medium. Within video game theory, there are two emerging fields: ludology (the study of videogames) and narratology (the study of narrative and narrative structure).

The principle concern of this thesis is what value videogames can offer as a platform for educational initiatives. The object of investigation for this study, the game *Never Alone*, places this thesis within both narratology and ludology (as explained in section 2.2.1). *Never Alone* is highly narrative-based and reveals the values and culture of the Iñupiat people through an interactive narrative, yet the gameplay accounts for a large part of the experience.

1.6 Research structure

The subsequent chapter provides a theoretical background for the research by providing a literature review on videogames. The third chapter explores what they have to offer in education and learning as expressed in relevant literature.

The fourth chapter outlines the methodologies of the research, in which my experience playing *Never Alone* is a single instrument case study. In this chapter, I explain the frameworks utilized to gather and analyze data.

Chapter five concentrates on analyzing the data from the gameplay. This chapter will also synthesize the results in order to draw effective conclusions in the final chapter.

The final chapter concludes the thesis using the synthesized results from the research to draw conclusions and make suggestions about the utility of videogames in cross-cultural education. First, the main results of the research are summarized. Second, the whole study and its feasibility and relevancy are assessed in consideration of the primary research question. Finally, future research recommendations are also given.

II. THEORETICAL FRAMEWORK

This section explores the existing literature of games by reviewing the existing definitions on games, the link between games and reality, and the concepts of *ludea* and *paidea* (Nielsen, Smith, & Tosca, 2008) (Parlett, 1991) (Salen & Zimmerman, 2004) (Caillois, 1961). By examining these areas, one can begin to understand how new videogames are as a medium and what role they play in one's life.

2.1 Defining Games

In terms of academic literature, videogames exist within the realm of games. Therefore, in order to provide a theoretical framework for videogames, it is foremost important to define games. However, as the comments below reveal, attempting to do that is no easy feat.

> "The word [game] is used for so many different activities that it is not worth insisting on any proposed definition. All in all, it is a slippery lexicological customer, with many friends and relations in a wide variety of fields" (Parlett, David (1991), "The Oxford History of Board Games", in Salen & Zimmerman, 2004).
>
> "What are games? Are they things in the sense of artifacts? Are they behavioral models or simulations of social situations? Are they vestiges of ancient rituals, or magical rites? It is difficult and even curious when one tries to answer the question "what are games," since it is assumed that games are many things and at the same time specific games are different from one another – but are they?" – (Avedon, E.M. "The Structural Elements of Games," in Salen & Zimmerman, 2004).

These quotes reveal a particular rhetoric in the existing literature on defining games; there is no consensus on the definition of games and there is often a sentiment of hopeless when trying to define them. This sentiment is apparent in Ludwig Wittgenstein's (1953) work, *Philosophical Investigations,* in which he argued that there are no common features in games, thus cannot fit within a single definition (Wittgenstein (1953) in Nielsen, Smith, & Tosca, 2008, p. 23). However, attempts have been made by different scholars starting from the 1950's to define and generalize games and gaming. Table 1 below outlines the principle game definitions most prevalent in existing literature.

Table 1 *- Definitions of games as per existing literature*

Source	Definition
Johan Huizinga 1938	[...] a free activity standing quite consciously outside ”ordinary” life as being ”not serious”, but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner. It promotes the formation of social groupings which tend to surround themselves with secrecy and to stress their difference from the common world by disguise or other means.
Roger Caillois 1961	[...] an activity which is essentially: Free (voluntary), separate [in time and space], uncertain, unproductive, governed by rules, make-believe.
Bernard Suits 1978	To play a game is to engage in activity directed towards bringing about a specific state of affairs, using only means permitted by rules, where the rules prohibit more efficient in favor of less efficient means, and where such rules are accepted just because they make possible such activity.
David Parlett 1999	A formal game has a twofold structure based on ends and means. Ends: It is a contest to achieve an objective… Only one of the contenders, be they individuals or teams, can achieve it, since achieving it ends the game. To achieve that object is to win. Hence a formal game, by definition, has a winner, and a winning is the “end” of the game in both senses of the word, as termination and as object. Means: It has an agreed set of equipment and of procedural “rules” by which the equipment is manipulated to produce a winning situation
Clark C. Abt 1970	Reduced to its formal essence, a game is an activity among two or more independent decision-makers seeing to achieve their objectives in some limiting context. A more conventional definition would say that a game is content with rules among adversaries trying to win objectives.
Greg Costikyan 1994	A game is a form of art in which participants, termed players, make decisions in order to manage resources through game tokens in the pursuit of a goal.
Avedon & Sutton Smith 1971	At its most elementary level then we can define game as an exercise of voluntary control systems in which there is an opposition between forces, confined by a procedure and rules in order to produce a disequilibrial outcome.
Chris Crawford 1982	I perceive four common factors: representation ["a closed formal system that subjectively represents a subset of reality"], interaction, conflict, and safety ["the results of a game are always less harsh than the situations the game models"].
David Kelley 1988	A game is a form of recreation constituted by a set of rules that specify an object to be attained and the permissible means of attaining it.
Katie Salen & Eric Zimmerman 2004	A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome.

Table Sources: (Abt, 1970), (Avedon & Sutton-Smith, 1971), (Caillois, 1961), (Crawford, 1982), (Costikyan, 1994), (Huizinga, 1938), (Kelley, 1988), (Parlett, 1991), (Suits, 1978), (Salen & Zimmerman, 2004).

These attempts to define games covers any and every type of game including chess, hopscotch, *Tetris*, soccer, and *Monopoly*. In synthesizing these definitions, one can note some commonalities as illustrated in Table 2 below.

Table 2 *- Common features in game definitions*

Source	Terminology used in definition
Games are by nature artificial and/or separate from reality.	
Huizinga	"…standing quite consciously outside 'ordinary' life as being 'not serious'"
Caillois	"..separate [in time and space]"
Crawford	"["a closed formal system that subjectively represents a subset of reality"]"
Salen/Zimmerman	"…players engage in an artificial conflict"
Games are limited and confined by established structures and procedures, commonly known as rules.	
Huizinga	"It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner"
Caillois	"…governed by rules"
Suits	"…using only means permitted by rules, where the rules prohibit more efficient in favor of less efficient means, and where such rules are accepted just because they make possible such activity."
Parlett	"Means: It has an agreed set of equipment and of procedural 'rules' by which the equipment is manipulated to produce a winning situation."
Abt	"…decision-makers seeing to achieve their objectives in some limiting context… a game is content with rules…"
Costikyan	
Avedon/Sutton Smith	"…confined by a procedure and rules…"
Crawford	"["a closed formal system that subjectively represents a subset of reality"]"
Kelley	"…a form of recreation constituted by a set of rules"
Salen/Zimmerman	"…players engage in an artificial conflict, defined by rules"
Games contain some sort of target, objective, or end.	
Parlett	"Ends: It is a contest to achieve an objective"
Abt	"…decision-makers seeing to achieve their objectives in some limiting context."

Costikyan	"…make decisions in order to manage resources through game tokens in the pursuit of a goal."
Avedon/Sutton Smith	"…confined by a procedure and rules in order to produce a disequilibrial outcome."
Kelley	"…a form of recreation constituted by a set of rules that specify an object to be attained …."
Salen/Zimmerman	"…players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome."
Participants (players) in games duel against each other as adversaries (a winner and a loser) attempting to meet an established succeeding objective.	
Parlett	"Only one of the contenders, be they individuals or teams, can achieve it, since achieving it ends the game. To achieve that object is to win. Hence a formal game, by definition, has a winner, and a winning is the 'end' of the game in both senses of the word, as termination and as object."
Abt	"…a game is content with rules among adversaries trying to win objectives."
Avedon/Sutton Smith	"there is an opposition between forces"
Salen/Zimmerman	"players engage in an artificial conflict"

Table Sources: (Abt, 1970), (Avedon & Sutton-Smith, 1971), (Caillois, 1961), (Crawford, 1982), (Costikyan, 1994), (Huizinga, 1938), (Kelley, 1988), (Parlett, 1991), (Suits, 1978), (Salen & Zimmerman, 2004).

Therefore, if one combined these definitions using their commonalities, one would conclude that games are activities in which players play (either with opponents or by themselves) in an artificial context governed by rules and to meet some sort of established game goal. However, to claim that that these commonalities could constitute a definition of games would greatly oversimplify the existing literature. Instead, it is best to refer to Jesper Juul's (2003) classic game model in Figure 1 which illustrates how standard game definitions work by modeling reasons for calling something a game.

Figure 1 *– Jesper Juul's Classic Game Model*

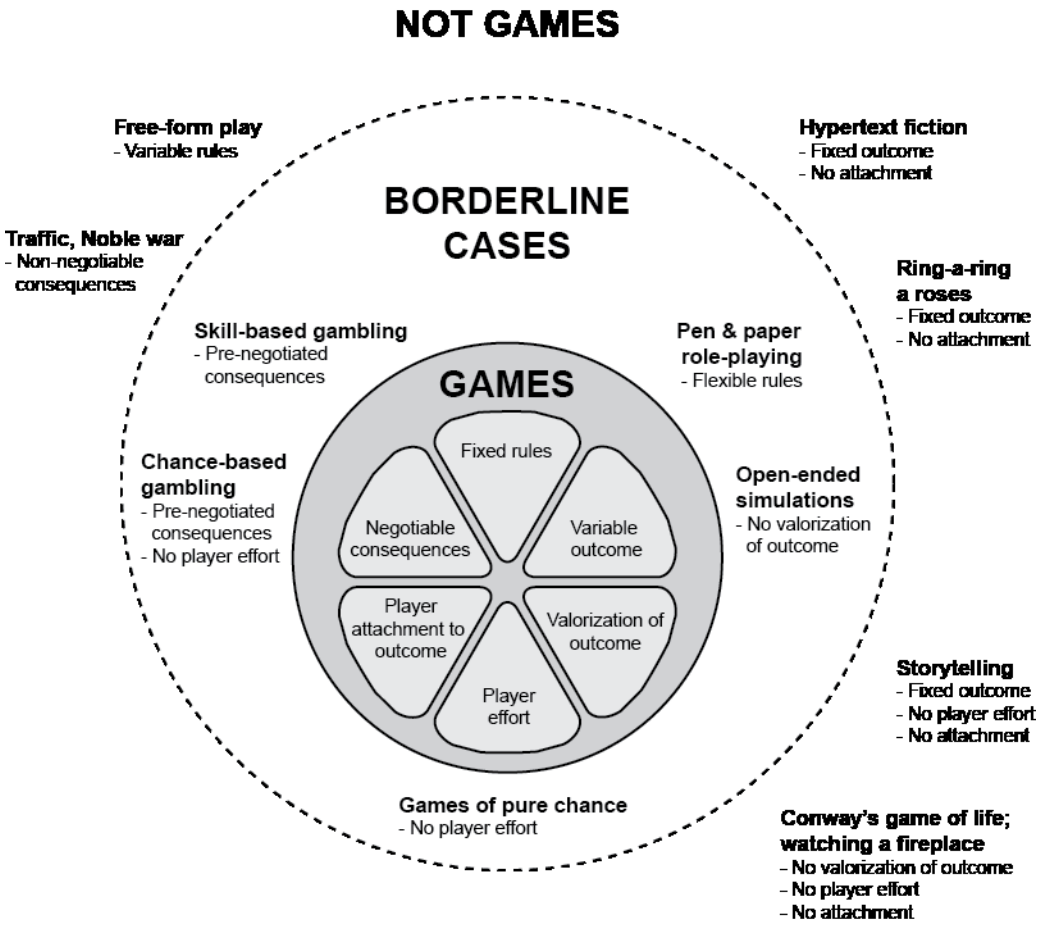


Figure Source: *Jesper Juul: "The Game, the Player, the World: Looking for a Heart of Gameness". In Level Up: Digital Games Research Conference Proceedings, edited by Marinka Copier and Joost Raessens, 30-45. Utrecht: Utrecht University, 2003.*

Above all, this model appeals to David Parlett's claim that defining games is not a worthy cause because there are many games that do not fit within this model, yet again undermining attempts to define games. For instance, as Juul claims, this model offers crucial shortcomings, especially when it comes to videogames which employ elements like storytelling or challenges players to set their own goals, like in *World of Warcraft* (Juul, J (2003) in Nielsen, Smith, & Tosca, 2008, pp. 35 - 36).

Neilsen et al. claims that definitions, such as the ones listed above, can be categorized as "formal" definitions, which are useful for a philosophical discussion, yet yield no constructive purpose (Understanding Videogames, 2008, p. 37).

To conclude the discussion on defining games, it is important to express that the existing definitions on games hardly apply to videogames. However, that is not to say that existing definitions offer nothing to the study of videogames. In fact, I argue that the main reason for studying these definitions is because they are useful in terms of game development. Game developers ought to establish their own definition, rather than pick a "correct" one from the existing definitions. Yet, by studying previous definitions, developers and designers can understand the commonalities among the existing definitions, and construct their own definition. Furthermore, by understanding the shortcomings of these definitions, developers can realize their full potential.

2.1.2 Games and reality

In the book *Understanding Videogames,* the authors claim that scholars who have attempted to define games were unconcerned with matters of representation. By representational activities, I mean how games can be perceived as part of reality. In the definitions above, one of the defining criteria mentioned is artificial contexts. In other words, it is believed that games exist in artificial contexts, but does that necessarily mean they are separate from reality? Many theorists consider games as separate from reality. For instance, Johan Huizinga in his 1938 work, *Homo Ludens* (roughly translated as *Man the Player*) explains that games exist in contexts that are completely separate from reality. With this explanation, he coined the concept of "the magic circle" which expresses a divide between a game and reality, or the outside world. In elaborating on this, Simon Nielsen et al. says, "Playing a game, in this view, means setting oneself apart from the

outside world, and surrendering to a system that has no effect on anything which lies beyond the circle" (Huizinga (1938), in Understanding Videogames, 2008, p. 24). And while the magic circle is often cited in the study of games and videogames, there are many theorists that view games as part of reality and express the real world implications of games. For instance, media theorist Marshall McLuhan, considers games as reflections on culture that reveal cultural and society values, especially with popular games. In McLuhan's (1964) work, *Understanding Media,* he makes two claims: first, that games are tied to the culture in which they exist, hence revealing the culture itself and second, that games release tension (McLuhan, 1964). However, as Nielsen et al. argues, McLuhan's second claim in particular is not backed by empirical data (Understanding Videogames, 2008, p. 29). Also challenging the concept of the magic circle is social psychologist George Herbert Mead (1934), in his work *Mind, Self, and Society*, in which1 he explains that games and play have a role in the genesis of the self (Mead, 1934) (Nielsen, Smith, & Tosca, 2008, pp. 31 - 32).. Therefore, games and play are part of a learning process in which humans can understand normal social activities.

By exploring the question of how games coexist with reality, I enter the realm of how games are part of human nature. In doing so, it would do well do discuss *paidea* and *ludea*.

2.1.3 Paidea & Ludea

Paidea and *ludus* relate to the English terms "play" and "game" – two concepts that are frequently examined in the realm of games (Parlett, 1991) (Salen & Zimmerman, 2004) (Caillois, 1961) (Nielsen, Smith, & Tosca, 2008). Parlett (1991), explains that while in English these two concepts are separate, but highly related, in other languages such as German and French, these two concepts are merged together to mean the same thing, "to play a game." Zimmerman & Salen (2003), in their work *Rules of Play*, explore the concepts "play" and "game" as separate but related notions. In doing so, they highlight two relationships:

Relationship 1: Games are a subset of play. In considering all of the activities that are considered "play", there exists an idea of loose and aimless action. Games are a more formalized and structured type of play.

Relationship 2: Play is a component of games. Complementing the first relationship, play is thereby a part of games .

To sum, games are a part of play and play are a part of games (Salen & Zimmerman, 2004). The discourse around the concept of "play" is often part of the literature about childhood development. In education, "play" is considered a natural component to cognitive development and growing. However, when it comes to "play", "games," and childhood development, the pioneering scholar, Jean Piaget is often referred to for his work in childhood development.

He studied the role of play and games in childhood development, and studied their relationship with the cognitive, affective, and social development of children. Piaget (1951) classified play in three main groups: play of exercise, symbolic, and rules. Play of exercise is performed by babies and young children in the first two years of life, and involve both the senses and movement. The purpose of this type of play is to explore the environment. As for the second category, symbolic, which is what children are typically known for because it involves imagination. Piaget claims that children enter symbolic play between the approximate ages of 2 and 7. With this sort of play, children utilize imagination, give objects specific meanings, and assume roles. For instance, pretending to be an astronaut and using a mixing bowl as a space helmet. After the age of 7, children become familiar with play that involve some established set of rules and undergo some sort of socialization process, such as sports or board games. This type of play makes up the third category, according to Piaget, which is called the "play with rules" (Piaget J. , 1951).

Piaget's classifications on play have not gone without scrutiny. For instance, in their work *Imagination and Play in the Electronic Age,* authors Dorothy and Jerome Singer (2005) point out that Piaget's classifications of play (or games) as fixed stages in development emphasizes childhood. The authors then argue that *paidea* and *ludos* extend to adulthood. For instance, allowing sand to fall through one's fingers at the beach is a form of sensory-motor play and playing charades is a form of symbolic play. Also many activities blend features of Piaget's classifications; for instance, charades employs the imagination yet still has rules (Singer &

Singer 2005). This literary lack of consensus begs the question of whether or not *ludos* (or games) can be concretely defined.

In addition to Piaget, French philosopher Roger Caillois touched on the notion of games and play in his work *Man, Play, and Games.* In this work, he claimed that play has four criterial elements: must be voluntary, uncertain, unproductive, and make-believe. As for games, he places games into four different categories (see Table 3): alea, games that are based on chance, such as gambling; agon, competitive games in which players play against each other; ilinx, games based on the pleasure of movement, such as hopscotch; and lastly mimicry, games in which the player acts within artificial contexts that are separate from reality (Callois (1961), in Nielsen, Smith, & Tosca, 2008, pp. 25-26).

Table 3 *- Caillois' Classification of Games*

	Agon *Competition*	**Mimicry** *Imitation*	**Alea** *Chance*	**Ilinx** *Vertigo*
Paida (Free-Form)	Children racing to the street corner.	Playing doctor	Playing heads or tails	Horseback riding
Ludos (Rule-Driven)	Chess	Theater	Lottery	Mountain Climbing

Table Content Source: *Caillois, Roger, Man, play, and games, New York: Free Press of Glencoe; 1961*

Games can be classified in multiple categories. For instance, the game poker can be categorized as both alea and agon. In addition to categorizing games, Caillois ranked games according to the complexity of their rules and in doing so alluded to the complex relationship of games and play, and how each can be seen through the concept of rules. In doing this, he utilized the terms *paidea* and *ludos* in his own way. Games with simple rules are considered as *paidea* (a Greek word meaning both child and school). An example of a *paidea* game would be hopscotch. On the other hand, games with more complex rules are classified under the term *ludos* (a Latin word for games and the root of the word ludology – the study of videogames). The video game, *Never*

Alone, according to Callois is categorized as mimicry and within the classification of *ludos*, like most interactive games.

Caillois' work does not exist without criticism. For instance, game scholar Jesper Juul argues that like all attempts to conceptualize games, Caillois' classifications are yet another example of how the literature on games is not useful when it comes to videogames (Juul, in Nielsen, Smith, & Tosca, 2008). These claims are somewhat true. There are many videogames that exemplify this literature, yet there are many that simply do not fit within existing literature. For instance, many mainstream games like *Heavy Rain* and *Life is Strange* are left unrepresented by the literature on games. However, this does not suggest that one should disregard such definitions and classifications when approaching videogames. Rather, these definitions offer great value to both videogames producers and consumers. For producers, i.e. videogame developers and designers, these classifications can serve as a framework for creating games. To elaborate, developers can use these definitions to construct the internal design grammar of the game, i.e. whether or not the game is free-form or rule-driven. On the other hand, consumers can evaluate games according to this binary. For instance, considering Piaget's development stages and Caillois' classifications, educators can chose games according the ages and developmental stages of their pupils. As an example, young children in the first or second development stages would respond better to videogames (or interactive games) that are free-form (*paidea*). To reiterate my concluding claims from chapter 2.1, it is foremost important to choose which literature is relevant to the videogame in question. In addition, the literature reveals the pervasive role both games and play have in development and society.

2.2 Videogames

Section 2.1 revealed that although videogames overlap with games, they exist within their own area where the existing literature on games faultily applies. This section will examine videogames are their own, as a subset of games, and conclude by establishing a definition of videogames for this thesis.

In light of the undoubtable success the gaming industry has seen in recent decades, it is easy to believe that videogames have demonstrated their potential as a new type of media. However, as Gee explains, the current video game market does not illustrate the vast potential the platform

actually has. “In my view, we have made to date 1% of the types of games that could be made” (Gee, 2007). The videogame industry is dominated by major companies which have more or less monopolized the creative and innovative potential of the platform. In the gaming community (gaming as in playing videogames, gamers as in those who play videogames often), these games are classified as “mainstream” and they take up most of the shelf space in major game retailers like *Gamestop.* Games that are not mainstream are called “indie” games, or videogames that are created by individuals, small groups, or small independent companies that don’t receive any funding or assistance from major videogame publishers. Both the mainstream and indie game industries are booming markets; but indie games specifically have experienced a lot of growth in recent years. In addition to their industry classifications, videogames are often categorized by certain genres, see Figure 2 below.

Figure 2 *– Game Genres*

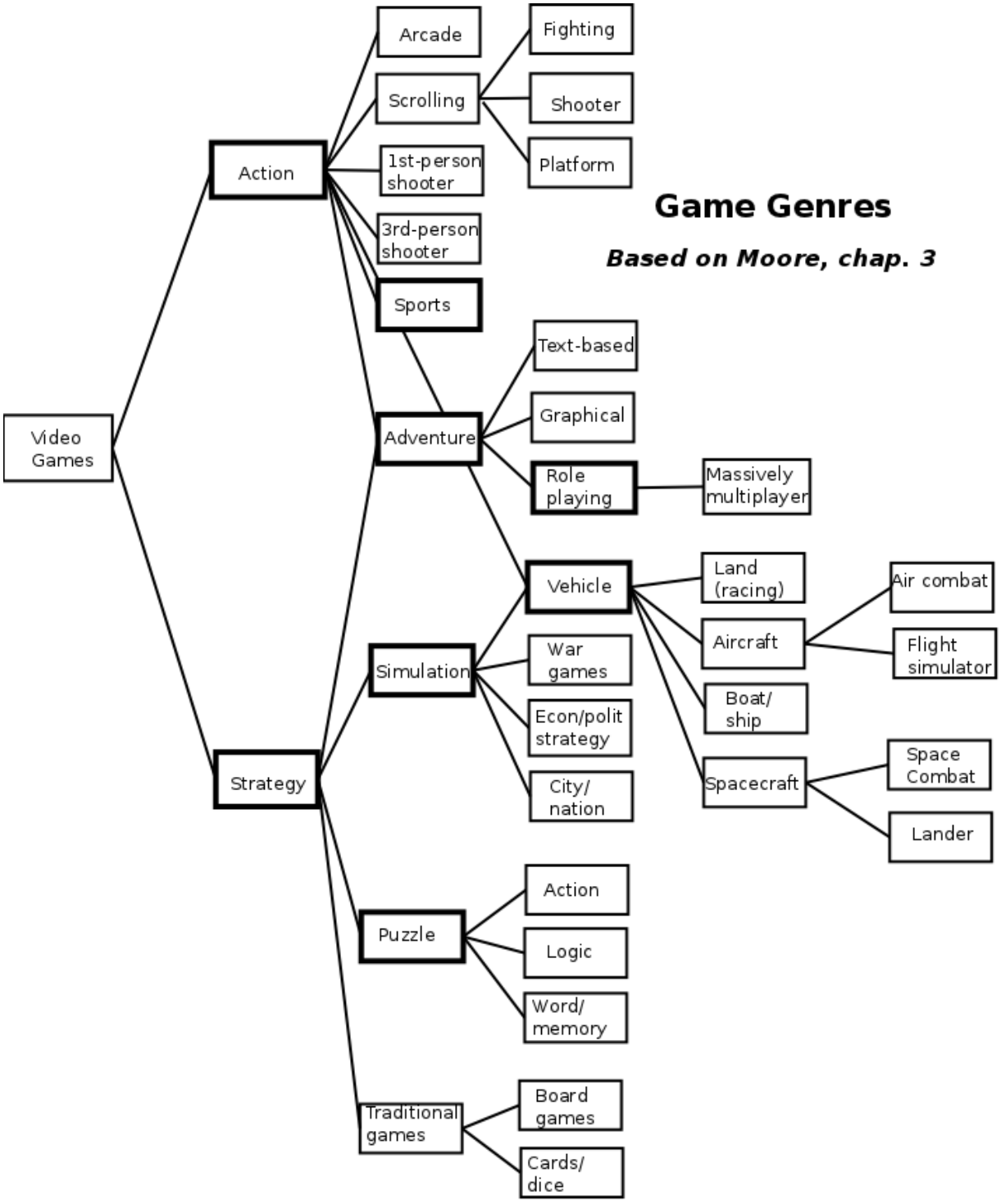


Figure Source: *Moore, Michael E., Introduction to the Game Industry, Chp. 3, Pearson Prentice Hall 2006*

In a 2011 report titled, *Video Gaming Trends: Violent, Action/Adventure Games are Most Popular,* action, adventure, role-playing, strategy games were among the most popular and top-selling videogames in the industry (Phan, 2011). A 2014 report, showed that in the U.S., action, shooter and sports games were the most popular in that these genres accounted for nearly half of the total videogames sales in 2014 (McCarthy, 2015). In addition, these games have made a mark in contemporary pop culture, specifically "classic" games like *The Legend of Zelda, Mario Bros., Half-Life,* etc. However, it is important to note that genre-classification about videogames has undergone much debate among scholars and media theorists (Nielsen, Smith, & Tosca, 2008, pp. 40-41). Despite this, the genre classifications aforementioned are upheld by gaming retailers, gamers, and the cultural community surrounding videogames.

Another way games are classified is according to the platforms in which they are played on. For instance, console games include games that are played on platforms like the Nintendo, Playstation, Xbox systems. Computer games can be played on a PC. Other platforms include online games (i.e. *Candycrush),* mobile games (i.e. *Angry Birds)* and hand-held systems (like Gameboy or PSP).

2.2.1 Studying videogames & the debate of Ludology vs. Narratology.

Within the realm of videogames and games for that matter, there are certainly schools of thought. As Neilsen et al. explains, in game studies, there are two research communities: the simulation community and the videogame studies community. Researchers in the first communities study both games and videogames. This community is well established and has its own conferences and journals. The second community focuses on digital games (Nielsen, Smith, & Tosca, 2008, p. 11).

The authors then explain that in the videogame studies community, there are two groups: the formalist group and the situationist group. The formalist group uses game or ontological analysis and represents a humanistic approach to media, whereas the situationalist group is interested in analysis of game players or the culture at large (Nielsen, Smith, & Tosca, 2008, p. 11). In alluding to the difference between the two groups, I paraphrase Janet H. Murray in her article, *The Last Word on Ludology v Narratology (2005).* Formalists focus on the game. Therefore

with the game *Tetris,* a formalist would argue that one can only understand the game through its elements: rules, actions, etc. The situationalist group would consider the player and consider how the game *Tetris* is a metaphorical reenactment of life (Murray, 2005).

Due to the scope and purpose of this thesis, I focus on the formalist group because this study specifically looks at the game *Never Alone,* rather than the social practice the game represents. Within the formalist group there are two fields: ludology and narratology. And as Neilsen et al. claims, "These two have so far instigated the most intense paradigm clashes of the field" (Understanding Videogames, 2008, p. 11). To explain this debate, I paraphrase Gonzalo Frasca. Ludologists focus on the game mechanics and gameplay of a videogame, and function within ludology which "…is most often defined as the study of game structure (or gameplay) as opposed to the study of games as narratives or games as a visual medium" (Frasca, 2003, p. 2). Ludologists also reject the claim that games are stories. As Frasca states, "When ludologists claim that, in spite of certain similarities, games are not narratives, it is simply because the characteristics of games are incompatible with some of the most widely accepted definitions of narrative provided by narratology" (Frasca, 2003, p. 6). Some notable ludologists include Markku Eskelinen, Jesper Juul, and Espen Aarseth. On the other side of the debate are narratologists which are scholars that "…either claims that games are closely connected to narrative and/or that they should be analyzed –at least in part– through narratology" (Frasca, 2003, p. 1). Some prominent narratologists include media scholars Janet H. Murray and Henry Jenkins. In reacting to this debate, many scholars including Frasca and Marie-Laure Ryan call for a new ludology and rejects the binary of narratology vs. ludology.

> "The inability of literary narratology to account for the experience of games does not mean that we should throw away the concept of narrative in ludology; it rather means that we need to expand the catalog of narrative modalities beyond the diegetic and the dramatic, by adding a phenomenological category tailor-made for games" (Ryan, 2001).

Without further elaboration on the debate, it is important to note that both theories make strong points as to why each should be considered as a dominant theory. However, it is also worth noting an obvious trend in the debates. There is a huge variance between the types of games that both ludologists and narratologists reference when debating their theory. For instance, narratologists reference games like *The Last of Us, Bioshock,* and *Heavy Rain,* all of which are

heavily narrative-based. Whereas, ludologists tend to reference games that are less narrative driven, in which the gameplay makes up a large part of the gaming experience like *Angry Birds, Fruit Ninja,* and *Candy Crush.* This variance begs the question of how both theories can engage with each other in game studies. In this thesis, both theories play a significant role in the analysis. In the game, *Never Alone*, both the gameplay and the narrative create a significant experience for the player. And although the game is highly narrative-based, the story is revealed through the gameplay. Hence, this study does not entirely adhere to one specific theory.

2.2.2 Public perception on games

Mainstream games are often under a lot of scrutiny by the educators, parents, and policy-makers. As James Newman describes in his book, *Playing with Videogames,* the case against videogames often entails four assumptions which involve 1) sociality, 2) creativity, 3) productivity, and 4) literacy (Newman, 2008, pp. 5-7).

The case for sociality consists of two main notions. First that videogames are a medium of isolation and that players are maladjusted socially (Newman, 2008, p. 5). This notion has been debunked by many that study games. For instance, videogame and linguistic scholar James Paul Gee explains that games like many activities are situated within affinity spaces, or communities in which people share and engage in a common activity (Gee, 2007, p. 26). Second is that violent videogames lead to violent behavior (Newman, 2008, p. 6) (Jenkins, 2005), a notion supported by Anderson and Bushman's meta-analyses which suggested that playing violent videogames leads to aggressive and violent tendencies (Anderson C. A., 2001). Out of all the cases made against videogames, this one is by far the largest in the media. And while correlations have been proven between videogames and violent behavior (Anderson C. A., 2001), this research does not exist without faults. MIT professor, Henry Jenkins describes in his article, *Reality Bytes: Eight Myths about Videogames Debunked*, "debunks" the myth that videogames cause violent behavior with the following explanation:

> "Claims like this are based on the work of researchers who represent one relatively narrow school of research, "media effects." This research includes some 300 studies of media violence. But most of those studies are inconclusive and many have been criticized on methodological grounds. In these studies, media images are removed from any narrative context. Subjects are asked to engage with content that they

> would not normally consume and may not understand. Finally, the laboratory context is radically different from the environments where games would normally be played. Most studies found a correlation, not a causal relationship, which means the research could simply show that aggressive people like aggressive entertainment" (Jenkins, 2005).

However, despite the lack of evidence, it is often a point of discussion whenever acts of violence occur, such as the Columbine High School shooting of 1999. This discussion usually depicts such that "The player is not merely socially withdrawn and incapable because of videogames. Rather, their condition is caused by videogames" (Newman, 2008, p. 5). While the discussion about violence in videogames is relevant and necessary, it is however important to note that videogames (like all other forms of media) by their mere nature do not invoke violent behavior. The discussion on violence should shift from videogames causing violent behavior, to how certain games allow players to engage in virtual acts of violence and aggression and what are the possible effects of this.

The second point of the case again videogames is about creativity. To discuss this, I cite public figure, Boris Johnson's portrait of videogame play as "blasting and zapping" that sends players into "speechless rapture" (Johnson, B. in Newman, 2008). Johnson's description of videogame play serves as a great example of the public opinion on videogames. However, nearly every gamer would reject such descriptions and claim that even the most seemingly mindless games invoke problem-solving skills, strategizing, and careful planning.

The third point involves the argument that videogames are unproductive. As Newman describes, "If we are to believe the image of players transfixed by the events on-screen, all but comatosed by the hypnotic stimuli and wholly absorbed in an unbreakable loop of mindless and inconsequential reflexes and twitches, then it will come as no surprise to learn that videogame players are unproductive sorts" (Newman, 2008, p. 6).

The last point that Newman expresses is that naysayers claim that videogames play an unproductive role in literacy. To summarize the popular discussion about videogames and literacy, when children spend time playing videogames, they are not reading books and thereby

not actively increasing their literacy levels. This same argument can be applied to television as well. However, this argument presents a very narrow definition of literacy. In fact, James Paul Gee, the pioneering scholar in videogames and learning, is a linguist and argues that videogames present a new form of literacy and offers great potential for good learning (Gee, What Videogames Have To Teach Us About Learning and Literacy, 2007).

These four claims make up the bulk of the public discussion on videogames. However, it is important to note that given the novelty of videogames as a media, the public has been too quick to judge. Therefore it is better to consider the academic perspectives in order to gain a better understanding and appreciation for videogames. For instance, in a study by Thomas M. Connolly, et al., *A systematic literature review of empirical evidence on computer games and serious games,* the authors performed literature review of about 129 articles with empirical evidence revealing the links between computer games and learning. Their findings reveal that videogames despite the aforementioned negative impacts, games offer a lot of benefits to players including a range of perceptual, cognitive, behavioral, affective and motivational impacts and outcomes, including knowledge acquisition/content understanding and motivational outcomes; hence demonstrating that videogames offer great potential as a learning medium regardless of its negative public perception (Connolly et al., 2012).

2.2.3 Defining videogames

When it comes to videogames, all of the reviewed literature on defining games offers shortcomings. The reason for this is because many of the scholars mentioned in section 2.1 were not considering videogames. Recognizing this gap, game designer Chris Crawford in his 1982 work, *The Art of Computer Game Design,* attempted to define videogames by listing four features that are common to all videogames, rather than provide a succinct definition. These four features include representation, interaction, conflict, and safety. Representation refers to games as a subset of reality in which the content represents something else. The second feature, interaction is about how players can influence the world of the game and receive meaningful responses to his/her actions within the game world. The third common feature is conflict in which the game is riddled with obstacles to overcome. The last feature Crawford describes is safety, meaning that the conflicts in games do not carry the same consequences as those same

conflicts in the real world (Crawford, 1982 in Nielsen, Smith, & Tosca, 2008, pp. 33-34). Relating to some of the text in 2.1.2 *Games and Reality,* of these features mentioned, representation and safety are the most debatable. Within the literature on videogames, there is a pervasive question of how videogames exist within reality and if they offer any real world consequences.

Offering another perspective to the definitions of videogames is media scholar Henry Jenkins who describes the platform as a new lively art form in which game designers are the artists of the 21st century (Jenkins (2005) in Nielsen, Smith, & Tosca, 2008, p. 31). In categorizing videogames as such, he implies that they are still in the infancy of their existence and their potential is enormous beyond comprehension. However, he states that videogames as they exist currently are "banal, formulaic, and predictable." They follow well-known recipes, stay within economic constraints, and lack innovation (Jenkins, Games, The New Lively Art Form, 2005).

While the above represent a sizeable chunk academic or scholarly discourse around defining videogames, it is important to note that other communities have attempted to conceptualize and label videogames. For instance, game developers have their own pragmatic model, such as the MDA model developed by Robin Hunicke, Marc LeBlanc, and Robert Zubeck. The MDA model seeks to divide games into three different dimensions: mechanics, dynamics, and aesthetics. Mechanics are the rules and basic code of a game. Dynamics is the way the game plays based on the mechanics. And lastly, aesthetics refer to the favorable emotional responses invoked in the player as he or she interacts with the game (Hunicke et. al. in Nielsen, Smith, & Tosca, 2008, pp. 38-39). Within this model, the aesthetic dimension relates to the notion that Jenkins expressed – videogames are essentially art and like all forms of art, it invokes emotional responses in people. Hunicke, LeBlanc, and Zubeck's MDA model offers 8 different aesthetic elements which draw players to play: "1. Sensation (game as sense pleasure) 2. Fantasy (game as make-believe) 3. Narrative (game as drama) 4. Challenge (game as obstacle course) 5. Fellowship (game as social framework) 6. Discovery (game as uncharted territory) 7. Expression (game as self-discovery) 8. Submission (game as pastime)" (Nielsen, Smith, & Tosca, 2008, p. 39). To conclude, the MDA model offers perspective to how game designers and developers conceptualize videogames and use this to inspire their own creative work.

2.3 Theoretical framework conclusion

The main takeaways from literature on defining videogames and games are the following:

1. Although videogames exist within the literature on games, the existing definitions of games hardly apply to videogames.
2. Attempts to understand and conceptualize videogames and their potential as a new medium is still in its infancy. And videogames as they currently exist do not represent its capabilities as media.
3. Given its relative novelty, researchers ought to choose their own definition to serve as a reference point for their own research. In other words, it does not do well to pick one existing definition and claim that it is correct, rather, it would serve researchers better to choose a definition that fits within the scope of their research.

Relating to my third takeaway, I prefer to view the concept of rules through James Paul Gee's notion of semiotic domains: "A semiotic domain recruits one or more modalities (e.g., oral or written language, images, equations, symbols, sounds, gestures, graphs, artifacts, and so forth) to communicate distinctive types of messages" (Gee, 2007, p. 16). Individuals associated with a specific semiotic domain convey meaning to the language, images, and various information in the domain (see chapter 3, section 3.1 Videogames and Semiotic Domains).

This definition is aimed at conceptualizing videogames within the scope of education and learning. And since this thesis is aimed at portraying videogames as a learning platform, this definition is suitable for my purposes. Furthermore, this definition offers enough ambiguity to demonstrate the vast potential videogames carry as a learning platform.

III. VIDEOGAMES AND LEARNING

This chapter is dedicated to exploring the topic of videogames and learning. However, given the ambiguity of this topic, it is foremost important to narrow it down and present a scope for this thesis. Since the primary concern of this thesis is how videogames can perform as a learning platform, my target audience is educators. Therefore, I inherently answer the question of what educators (both influencers inside and outside of the classroom) ought to know about videogames and learning.

In further narrowing the scope, I am focusing on a specific age group. This thesis examines videogame play of ages 18+, therefore college level students. The reason for this age group is because I, the researcher, evaluate my own learning experience when I play the game *Never Alone.* And since I fall within that specific age group, it seems only appropriate to discuss this topic as it pertains to students at the tertiary level of education. Hence to rephrase my previous statement, I answer the question of what educators at the university level ought to know about videogames and learning.

At the forefront of the discourse on videogames and learning is James Paul Gee, a researcher based in Arizona who has worked in psycholinguistics, discourse analysis, sociolinguistics, bilingual education, and literacy. If one were to synthesize his work, one would find that all of his research on the topic makes an overall claim that videogames offer a lot to educators. In fact, the main focus of his work is not videogames themselves, rather he situates videogames against education as it currently exists, and asks the question of how videogames measure up to educational institutions. In asking this question, he expresses many ways in which videogames can perform as a good platform for learning and how educators can learn from videogames as means to make up for the shortcomings of modern education. For instance, in his essay *Why Are Videogames Good For Learning?,* he expresses that it is not enough to claim that educators should use videogames for learning in and outside of the classroom, rather they should in addition to use videogames, use the learning principles built into good videogames to create new methods of learning. Such learning principles can have a great impact of curricula, even if videogames themselves are not played (Gee, 2005). In this chapter, I explore the topic of

videogames and learning along the same lines as James Paul Gee and in doing so, I reference his work often.

3.1 Videogames and semiotic domains

As mentioned before, I prefer to view videogames as semiotic domains – a concept created by Gee (2007). And although, I give an explanation as to what this concept is in previous sections, it is important to discuss how semiotic domains relate to education and learning.

For centuries, the label "educated" was tied to "literate" or the ability to read and write. This still holds true for modern education in the sense that the institution still holds literacy as a top initiative. Contrary to popular conception, however, literacy is not only limited to reading and writing language. In other words, language is not the only type of information communicated. Other information such as images, symbols, artifacts, etc. serve as alternative means of communication and thereby constitute an expanded perspective of literacy. For instance, being media or visually literate means one can "read" the images presented in an advertisement. In fact, a large topic of conversation among 21st century educators is expanding literacy to a concept known as media literacy or critical media literacy. In further expanding the notion of literacy, there is Gee's (2007) claim that people read or receive information in various ways. For instance, a person can read *The Bible* from different viewpoints. A devote Christian reading *The Bible* would read it in a very different manner than an academic scholar who studies religion, thus demonstrating the various forms of literacies.

The information communicated through language, symbols, images, etc. represents a certain social practice. For instance, a law textbook represents the social practice of practicing law. Through literacy, one can know a great deal about a social practice without ever having to participate in that practice. To illustrate this point, I give the example of reading a manual about the rules and regulations of baseball. One can read such a manual and gain an understanding about the game and how it works without ever having to play the actual game. However, as Gee (2007) argues, a deeper understanding occurs when one receives information and participates in the social action (p. 13). In doing so he uses the following example, "The guard dribbled down court, held up two fingers, and passed to the open man." Traditionally speaking, a literate

person would be able to understand each of these words by their dictionary definition. However, the meaning of this sentence is linked to a social practice, and only by knowing this practice, can the reader gain an understanding of the sentence. This social practice in this example is basketball. A person who has little to no knowledge at all about basketball would not be able to "read" this sentence. However, a person who is familiar with this social practice would be able to decipher a better understanding of the sentence (p. 13).

Overall literacy ought to be reconceptualized and expanded to include multiple forms of literacy across various social practices. These social practices are what Gee (2007) calls semiotic domains: "By a semiotic domain I mean any set of practices that recruits one or more modalities (e.g., oral or written language, images, equations, symbols, sounds, gestures, graphs, artifacts, etc.) to communicate distinctive types of meanings" (What Videogames Have To Teach Us About Learning and Literacy, p. 16). The list of what can be considered as a semiotic domain is endless.

Arguably education as it currently is focuses on content based learning, or subject-matter learning, a notion supported scholars from philosopher John Dewey (1938) to Gee (2007) (Gee, p. 18). Gee (2007) labels this as passive-learning and argues that students receive the information, yet they are not participating in the social practices, or semiotic domains through which to gain a more holistic understanding. The problem with content-based learning is that education seeks to expose students to various semiotic domains, like biology, history, etc., but these semiotic domains are not primarily content. Rather it's the opposite, these semiotic domains produce content (Gee, 2007, p. 19). Therefore he suggests that instead of learning semiotic domains primarily through content, that we consider an alternate form of learning; one that he calls "active" learning. When a student actively learns a domain, three things occur: they are "experiencing the world in new ways, forming new affiliations, and preparing for future learning" (Gee, 2007, p. 22). Gee (2007) essentially argues that good videogames can serve as platform for active learning. In doing so he claims that 4 things occur when one plays videogames in an active and critical manner:

> "1. Learning to experience (see and act on) the world in a new way
>
> 2. Gaining the potential to join and collaborate with a new affinity group [or otherwise known as social groups or communities]
>
> 3. Developing resources for future learning and problem solving in the semiotic domains to which the game is related
>
> 4. Learning how to think about semiotic domains as design spaces that engage and manipulate people in certain ways and, in turn, help create certain relationships in society among people and groups of people, some of which have important implications for social justice" (Gee, 2007: p. 44).

Therefore, videogames can bridge a gap between information and social practices, by providing a platform in which students can actively learn various semiotic domains.

> "The content of videogames, when they are played actively and critically, is something like this: They situate meaning in a multimodal space through embodied experiences to solve problems and reflect on the intricacies of the design of imagined worlds and the design of both real and imagined social relationships and identities in the modern world" (Gee, 2007: p. 47).

Gee's claims are essentially supported by the psychologist and cognitive scientist Lawrence Barsalou's claim that "Comprehension in grounded in perceptual simulations that prepare agents for situated actions" (Barsalou, 1999: p. 77). The main argument against education as it currently exists is that comprehension is weakened because perceptual simulations are lacking. In other words, students have the information, but don't often have a chance to participate in the social practice. Hence, what many videogame researchers claim is that videogames can serve as a bridge between the two, thus fostering better learning. And while videogames themselves constitute their own semiotic domain, they can also serve as a platform for learning semiotic domains. Referring back to the example about basketball, videogames that allow players to play basketball in a virtual space, like the classic, *NBA Jam* for Nintendo 64, allows students to actively learn the game and participate as a player.

However, this is not to say that all videogames provide such learning experiences. In fact, many mainstream games, while they are designed on solid learning principles, are not good games for good learning. Therefore, the question of the future of videogames as platforms for learning and participating in semiotic domains is yet to be seen. Nevertheless, videogames have a lot to offer educators.

To conclude, when one plays good videogames, they are demonstrating an alternative form of learning and knowledge acquisition that differs from traditional content-based or subject matter learning. In fact, videogame players are learning a new literacy which expands beyond traditional conceptions of the term "literacy". This new literacy is called a semiotic domain, or a set of practices that recruits one or more modalities to create a certain meaning. These are otherwise known as perceptual simulations (Barsalou, 1999) or social practices (Gee, 2007). This new form of literacy can offer better learning and fill the cracks of content-based learning.

3.2 Videogames and identity

Videogames construct virtual worlds that are filled with characters, conventions, and capabilities. When players play videogames, they take on the identity of a character within that virtual world. Sometimes, the players have the option of constructing their character. For instance, in many role playing games (RPGS), the player can build their character; but the character they build is constructed within the framework of characteristics that the game offers. However, in RPGs, players can choose both physical and personal characteristics. For instance in the game, *Dragon Age*, the player has the option of choosing the character's ethnicity, gender, physical appearance, and even their trade. Many characteristics have certain specifications, abilities, or even stories. For instance, a particular race might have different abilities than another race.

Though regardless of whether or not the game allows players to build their character, when players play videogames, they are experimenting with different identities. The connection between the player and their character is quite complicated. To explain this, Gee (2007) claims that there are three types of identities at play when videogaming: virtual, real-world, and projective identity. To explain these three identities, I will use the phrase, "Kandace as Link", Kandace being me and Link being the character in (my favorite videogame) *The Legend of Zelda, Ocarina of Time.*

*"*Kandace as *Link*". To demonstrate, virtual identity, "Link" is in italics. When I play as Link, he makes up my virtual identity. I engage with this world through him and his capabilities as a virtual character. "*Kandace* as Link". My name is in italics to illustrate real-world identity. This

identity is my own that exists in the real-world. “Kandace *as* Link” where the word, “as” is in italics represents projected identity. This last identity is arguably the most interesting. With this identity, I, Kandace, project myself onto the character. For instance, in many games, the player makes a series of choices that could have a variety of outcomes for the character. Many times when making these decisions, the player projects their own values and desires onto their character.

> “seeing the virtual character as one’s own project in the making, a creature whom I imbue with a certain trajectory through time defined by my aspirations for what I want that character to be and become (within the limitations of her capacities, of course)” (Gee, 2007: p. 54).

Many videogame players feel a sense of responsibility for the characters they assume, since they are a projection of the player. This phenomenon is unique to videogames, especially when compared to other media like books or movies.

So what does this mean for learning? Well as Gee (2007) explains, all active and critical learning in semiotic domains requires identity work. And learning is impaired whenever learners cannot bridge between their real-identities and their virtual identities that are at stake in the classroom (i.e. a scientist, or mathematician). To elaborate, the projected identity is the space between one’s real-world and virtual identities. In videogames, this is the identity projected between the player and the character in the game. In the classroom, this is the learner and the role they are assuming. For instance, in a science class, the learner could assume the role of a chemist in which they perform chemical experiments using the scientific method and so on. The virtual identity in this case being the chemist and the learner has their own real-world identity. Between these two identities is the projection, where the leaner puts his or her own values, desires, and frame of reference into their virtual role as a chemist. This projected space is important for learning, because through which the student can begin to take on the virtual identity as their own, real-world identity. Whenever a learner cannot bridge these two identities through projection in which these identities remain segregated, then learning is hindered because (going back to the example), the learner cannot then be a chemist. Rather they can and are only willing to assume the artificial role as such.

Going back to the question of what educators ought to know about videogames, it is important to clarify that I am not saying the educators ought to facilitate that projected space between

player and game character. This will depend on the videogame, its purpose, and the game character in question. The point is that this process, or identity phenomenon, between the two reveal something about learning and identities, which to reiterate is that projected identities are crucial to good learning. Identity is often forgotten in traditional education. Going back to the example of the learner as a chemist, whenever a learner questions what they are learning - by asking questions like: *Why am I learning this? Who uses this and for what purposes?* – they are essentially not understanding or missing the virtual identity. Whenever these questions emerge, identity can come into play. For instance, the learner can understand why they are learning chemistry by assuming the identity of a chemist. Videogames are good at creating identities in which the answers to such questions are implied within the design of the game. There are clear goals and roles for the player.

3.3 Learning principles in videogames

As Gee (2007) extensively claims, in formal education, or schools as they currently exist, place emphasis on learning facts. As mentioned earlier, this type of content-based learning is problematic (see section 3.1). As Dewey (1938) claimed, traditional education fails to bridge the gap between the content that is taught and the real-world. For videogame researchers, Dewey paved the theoretical framework for using videogames as learning tools allowing for the argument that videogames can be the platform to bridge that gap.

As one of those researchers, Gee (2008) argues that videogames are good learning tools because they function like the human mind. Reiterating some of my aforementioned claims, “humans think and understand best when they can imagine (simulate) an experience in such a way that the simulation prepares them for actions they need and want to take in order to accomplish their goal” (Gee, 2008). Videogames, according to Gee and many others, act as these simulators.

However, the biggest argument for the learning potential through videogames is also from Gee (2007), in this 36 learning principles. In his book, *What videogames have to teach us about literacy and learning,* he argues that there are 36 principles of good learning and they can be found in good videogames. Below is a table outlining 13 of the 36, (see Table 4).

Table 4 *– James Paul Gee's Learning Principles in Videogames*

How Games Empower Learners	
Agent Principle	Learners must feel like what they do matters. Therefore they must want to act. Players in videogames are essentially agents because their actions matter in the game.
Customization Principle	Learners must feel like they can solve problems in ways that are suitable to their learning style.
Identity Principle	Learners must be able to try on new identities. Games are a great platform for experimenting and creating identity.
Manipulation Principle	Learners need tools that utilize the mind and the body. When players have control over their character, they mentally project their body into that world. Hence why some players physically move whenever they perform a certain action in the game
How Games Assist in Problem-Based Learning	
Well-Ordered Problems Principle	Learners must be able to progressively build their problem-solving skills by sequencing problems so that they can gradually become more and more challenging. Videogame levels implement this principle.
Pleasantly Frustrating Principle	Learners must feel challenged when solving a problem and some sort of accomplishment after solving. The problem must stay within the "regime of confidence" in which the learner knows that he/she can solve the problem.
Cycle of Expertise Principle	Learners must solve problems in a cycle in which they are presented with a challenge, then practice, acquire knowledge, and eventually master the challenge.
Information Principle	Learners must know to apply the language they receive. With this principle, learners either receive information and immediately reply to it, or only receive information as needed.
Fish Tank Principle	Learners must be introduced to complex concepts by breaking down the concept. For instance, introducing a concept by presenting a few variables and then gradually adding more. Videogames do this through leveling.
Sandbox Principle	Learners must have safe places to explore and try things with low risks.
Skills as Strategies Principle	Learners must practice skills to master something. The skills that they are acquiring must lead to a goal.

How Games Facilitate Life-long or Deep Learning	
System Thinking Principle	Learners are constantly exposed to complex systems (environment, society, technology, etc). Learners must be skilled in system thinking in order to grasp complexity. Games on their own are a complex system in which players engage in model based reasoning (thinking of the variables and their interactions).
Situated Meaning Principle	Learners must attach meaning to words through images, actions, experiences, or goals. Learners must receive more than words to attach meaning to other words.

Table Source: *Gee, James Paul, Jim Gee Principles on Gaming, Arizona State University (2013), Film*

With these 13 principles (see Table 4), Gee argues that while good videogames often exhibit good learning, it doesn't mean that videogames ought to be treated as the only tool for good learning. He explains that teachers ought to treat their lessons as designed spaces and using good learning tools, like videogames, to carry out these principles.

3.4 Videogames and learning conclusion

In terms of education, videogames offer two things 1). They demonstrate good learning principles and 2). They can serve a learning platform that bridges between information and the real-world. For educators at the tertiary level, videogames can serve as a platform parallel to books and film as means to gap information to its corresponding semiotic domain. In implementing videogames as a learning tool, students can learn how to use videogames as a method of learning, rather than a means of entertainment.

In this thesis, I will examining my own learning experience by playing the game *Never Alone*. The next chapter is dedicated to my research methodology in which I explain how I will create such a learning experience, and how it will be analyzed.

IV. METHODOLOGICAL CHOICES & THE RESEARCH PROCESS

This thesis explores the topic of videogames as a learning platform. It is aimed at educators and it explores videogames as a new type of media that can be utilized for learning initiatives. In the previous chapter, I claimed that videogames are still in their infancy of existence and their full potential is yet to be demonstrated to the market and academia. Yet despite their novelty, they offer a lot to educators.

Therefore to explore this topic, I will play the game *Never Alone* and evaluate my own learning experience (see appendices for images of the game). This particular game has received a lot of praise in its efforts to shed light on a marginalized indigenous culture based in Alaska. According to the game developers, Upper-one Games, game-makers teamed up with community leaders from this culture to create a game aimed at cultural expression. Per the game's website, they describe the game as the following.

> "We paired world class game makers with Alaska Native storytellers and elders to create a game which delves deeply into the traditional lore of the Iñupiat people to present an experience like no other. Never Alone is our first title in an exciting new genre of 'World Games' that draw fully upon the richness of unique cultures to create complex and fascinating game worlds for a global audience….. Never Alone leverages the power of videogames to share, celebrate and extend culture. These World Games will empower indigenous communities around the world to share their stories in an authentic, engaging, and entertaining way" (Never Alone Game, Web).

As the player, this synopsis is the only verbal information I had received about the game, prior to playing it. Also prior to playing, I had viewed images of the game and I watched a game trailer which showed both the game's aesthetics and its gameplay. The virtual identity I assume in the game is a young Iñupiat girl who is accompanied by an arctic fox (see Appendix 3). However, it is important to note the prior to playing the game, I had no knowledge of this culture and their existence. I had not had any real-world experience with the culture or anyone who identifies with this culture. I had also never, to my knowledge, received any information about this culture through any form of media.

The semiotic domain that I am learning is the Iñupiat culture, and the tool by which I am learning this is the game. Therefore, if this game were a lesson in a school-setting, it might be placed

under social sciences or any discipline that touches on human cultures. My primary research question of how can videogames be used as an educational platform for enhanced cultural-learning? In the previous chapter, I explained that videogames can serve as bridge the gap between information and its social practices. Since many researchers argue that education focuses too much on information and not nearly as much on social practices, there is much need for learning tools that can bridge this gap. Therefore, by the word "enhanced", I mean learning that not only has information, but also gives a social practice. With content-based learning, I would gain facts and information about the Iñupiat culture including what they eat, how they dress, their lifestyle, religion, and general way of life. I could also gain information about their history as a culture, their values, and their struggles as a people. However, culture is not content in that it is rigid information and facts. Rather it is fluid, ever-changing, and impossible to confine. Therefore, I am using the game *Never Alone* in an attempt to learn about the culture in a way that is contrary to traditional content-based learning. In doing so, I not only aim to answer my primary research question, but I also wish to explore the question of what the game can teach us about implementing cross-cultural learning initiatives in videogaming?

4.1 Ontological and epistemological perspectives

This research is both qualitative and participatory, in that I am an active participant in the research itself. Since I will evaluate my own frame of reference and my own gaming experience, this thesis employs an emic approach where the researcher's experience and values affect the outcome of the research.

The ontological perspective of this thesis is that reality is perceived as subjective and relative in which it is constructed by individuals. Furthermore, inherent to qualitative research, this research approaches knowledge as subjective in that it is gained through experiences and is up to interpretation. Essentially, this thesis falls under the category of interpretivist research.

4.2 Research methods

In carrying out the research task of this thesis, I perform a case study in which I assess my own learning experience. The *case* in this research is a human activity (playing a videogame), and the space or boundaries of the case is the game itself and the timespan it takes to complete it. This is a single-instrument case study. As a researcher, I am concerned with how videogames

can be utilized as platforms for cultural-learning. To illustrate this concern, I use my experience playing *Never Alone* as a single case.

As for the *study* part of this case study, I use a gameplay recording. The data-gathering process consists of using the game recoding software, Elgato Game Capture HD 60 to capture my gameplay while also recording my verbal documentation throughout the case. This recording will serve as my sole source of data.

To analyze this case study, I use the model of experiential learning theory, created by David A. Kolb which was highly inspired by the works of John Dewey (1938). This theory claims that learning takes places through experiences and entails a 4-step process (Kolb, 1984):

1). Concrete experience (playing the game - this is the human activity, or the case)

2.) Reflective observation (reviewing the recording)

3.) Abstract conceptualization (analysis of the data)

4.) Active Experimentation or Application (making conclusions about the data).

According to Kolb, the only way I can learn about my research concern is to actually experience it using these 4 steps. Step one is the *case* of this case study in which the human activity in question is playing the videogame. Steps two, three, and four are the *study* parts of this case study.

However, it is important to clarify the complicated dual-fold nature of this case study. The first is the cultural learning experience that is fostered by the game and second is what this implies for answering my research. My research question is about how videogames can serve as a platform for enhanced cross-cultural learning. Therefore, I am examining how the videogame *Never Alone* serves as a platform for enhanced cultural learning, and to examine this, I am using my own learning experience as a case. In addition, I use Kolb's model as a way to analyze that case. In steps one, two, and three, I mainly focus on the cultural learning experience – the game. In step four, in addition to the cultural learning experience, I begin answering my research question by expressing what my learning experience implies about videogames and learning.

The reason why this method suits my research purposes is because it allows me to document and analyze a real experiential learning experience. To elaborate, I am concerned with videogames and learning and using my own learning experience to demonstrate this.

Furthermore, it is important to note that both the gameplay and reflective feedback recordings play an equally vital role. The reflective feedback documentation is not enough on its own. To elaborate, my aim is to gather data on how the game itself created this learning experience, not only how I respond to the game. For that reason, both the gameplay and my voice recordings are required.

V. RESEARCH ANALYSIS

5.1 Game synopsis and overview

The virtual story is set in a harsh, physical environment in Alaska (see Appendix 1 & 2). As the player, I assume the role of a young Iñupiat girl, named Nuna who is accompanied by an Arctic Fox (see Appendix 3). The game is based on a single narrative that reveals itself through various points in the game. The narrative is told in the spoken Iñupiaq language by a single narrator, and is translated through English subtitles (see Appendix 1 & 4). In this story, Nuna's village is exposed to a never-ending blizzard, which disturbs the livelihood of the villagers. Therefore, Nuna sets out on her own to find the source of the blizzard. At the beginning of her journey, she encounters an artic fox that accompanies and assists her as they encounter various obstacles in their quest. The player controls both the fox and Nuna, who each have their own distinct capabilities.

The game itself consists of various levels in which Nuna and the fox must overcome "physical" obstacles in order to progress to the next levels. Overall, this game is a puzzle-solving game in which each level progressively gets more difficult than the last as it adds more variables of complexity. Between each level and at certain "accomplishment" points in the game, a new part of the narrative is revealed by the story-teller (see Appendix 4). Each new part of the story presents certain themes that appear in each level. Furthermore, each level offers opportunities to gain what they call "Cultural Insights" (see Appendix 6). The insights are mini-documentaries which feature members of the Iñupiat community. In these short films, these members further discuss the various themes presented in the game. The cultural insights can be accessed through the Start Menu and are an optional feature, but add greatly to the overall experience of the game.

The gameplay employs a classic side-scroll camera view in which the action is viewed from a side-view camera angle, and the characters move either left or right in a 2D artistic world. Furthermore, the puzzle-solving model of the game is classic, well-known to gamers, and featured in many games like *Limbo, Machinarium,* and *Vessel.*

Overall, the game consists of two main elements: the narrative and the gameplay. Both of these elements come together to create an experience for the gamer that entails some cultural learning and a shift in perspective.

5.2 Frame of reference, biases, & scope of analysis

Since I am the sole participant in this case study, it is foremost important to present my own biases and frame of reference. In doing this, I express my cultural stance in society and perspectives that I have gained throughout my upbringing. I also discuss my biases about this case study and the limitations of this analysis.

As a white, educated female, that is also part of the so-called "Western" society, I have perspective that tends to view indigenous cultures as embedded in historical and obsolete practices. This is not a perspective that I actively express, but one that I have received from my upbringing and education. In grade school, we (my classmates and I) were given Eurocentric lessons about North American indigenous cultures. This is especially true in regard to Native Americans or so-called Indians. The extent to which I learned about Native American culture was limited to how these groups of people fit within the European scope of American history. In other words, I learned about how Native Americans played a role in the colonization and independence of the United States. Therefore, I learned concrete facts consisting of times, dates, events, the people involved in these events, and so on. With this sort of education, Native Americans were often portrayed as one single group of people in that they were the "other" and not European. As a result, the various cultures, histories, and values of the Native Americans were lost in the Eurocentric viewpoints of American history. The narratives which were centered on Indian heritage were constructed and portrayed by non-native groups. For instance, a widely popular story in my culture is Pocahontas – a love story between an Indian woman and a European man. This story has been adapted to various books and movies, but it most popularly known through Disney's movie adaptation released in 1995.

In place of indigenous narratives were Eurocentric perspectives and labels that reduced Native Americans to a single characteristic – a group of people who refuse modern society and the "western" way of living. In grade school, I received these perspectives and labels as part of my schooling thus constituting my frame of reference in regard to African American. Similar

perspectives hold true in terms of my exposure to Eskimo cultures in Alaska, which are more closely related the Iñupiat culture. However since Eskimo cultures did not play a large role in American colonization and Independence, school lessons about these people were reduced to a few cultural facts: what they eat, how they live, what they wear, etc. Apart from school, Eskimo cultures were portrayed in the media according to their various stereotypes such as wearing caribou clothing, hunting whales, and living in igloos. These stereotypical images widely shaped my perspective on Eskimo culture and serve as a large part of my frame of reference in this case study.

As for my biases in this case study, it is important for me to express that I am widely pro-videogames. The questions I am asking in this thesis are not *whether or not* videogames should be a part of education, rather they are about *how can* videogames be a part of education. Like many who take on the task of researching videogames, I habitually play. I have played videogames as a hobby for decades and through that experience, I am convinced that videogames have a lot to offer as a medium. I also carry the tone of insistence that educators learn more about videogames and what they can offer in the classroom. Therefore in this case study, I play the game believing that a learning experience is taking place. I do not just "play a game", rather I learn about an unfamiliar culture by playing a game. I went into the game knowing and believing that I would receive something from it albeit knowledge, new perspectives, etc. In other words, this game serves as my first interaction with the Iñupiat culture and I treat it as such in this case study. I consider this a bias because not all players would approach this game in the way I have. In fact, many players do not play games to gain some sort of meaningful learning experience, rather they play them for entertainment.

This thesis focuses on videogames as learning platforms, therefore it is crucial to express that I do not analyze the game primarily for its content. My primary objective is to analyze the activity of playing the game, but that entails the analysis of content. It is important to make this distinction because this analysis is not focusing on the content and how it fits with the neoliberalist agenda or postcolonialism. Therefore, I do not draw conclusions about how well (or not well) this game rejects neoliberalism and/or westernized society, or how well (or not well) it portrays a marginalized culture from a "wholesome" or authentic point of view. I do not question the game's construction, instead I question my experience playing the game as it is.

5.3 Case study analysis

In analyzing my experience, I will use Kolb's theory of experiential learning which claims that learning occurs in a 4-step process: experience, observation, conceptualization, and application (Kolb, 1984). The figure 3 below illustrates how Kolb's theory applies to this case study.

Figure 3 *– Kolb's experiential learning theory applied to this case study.*

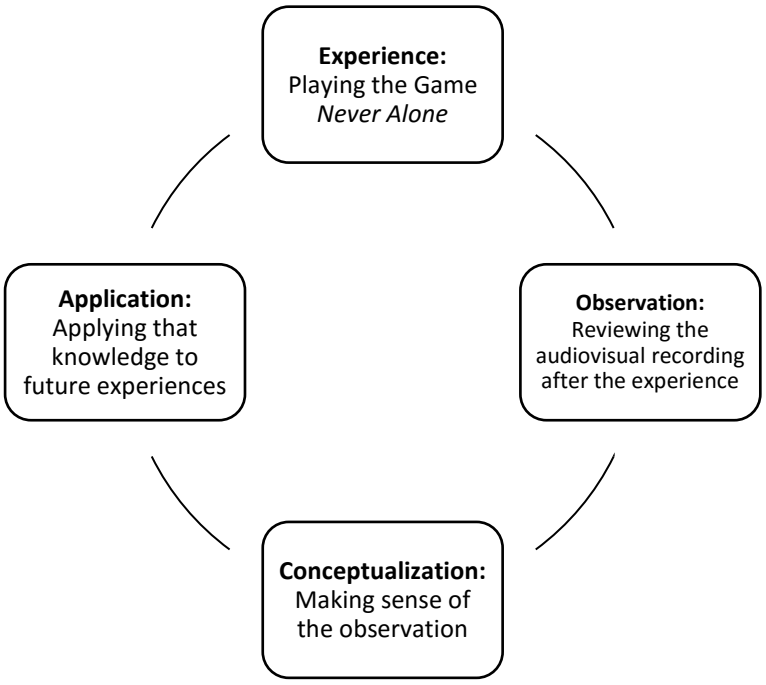


Figure Content Source: *Based of Kolb's (1984) experiential learning theory from (Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall.)*

5.3.1 Experience

According to Kolb's model, one must first engage in an experience to begin the process of learning. For this case study, that meant playing the game *Never Alone.* In discussing the process, I use two categories: 1. sensational experiences and 2. mental experiences. These are limited to what I primarily experienced when playing the game.

The sensational experiences are reduced to visual, audio, and physical. The visual experience of the game is very prominent. The 2D world in the game is artistic and aesthetically beautiful (see appendices). In fact, the physical appearance of nearly every aspect of the game (i.e. the characters, world elements, spirits) has an impacting beauty. This type of aesthetic creates the sensation that the player is essentially observing and interacting with art.

As for the audio experience, there are two contributing aspects. The sounds of the game and the story teller. First, the sounds of the game mainly consist of the sounds of nature and the elements Nuna and the fox encounters in their quest. For instance, the harsh sound of the wind, blowing snow adds to this feeling that this virtual setting is harsh and demanding. Or the sound of destruction whenever a character interacts with an element in the world. For example, when a tree branch that is supporting Nuna cracks making her fall. These game sounds create the sense that there are giant forces at play within this virtual world. Second, the story teller narrating this tale in the native language plays a large part in the experience. Obvious to the player, the narrator is an elderly man who calmly tells the story in which the game is based on. Although I could not understand the language, this audio experience is very important in the game (see section 5.3.2).

The last sensational experience is physical. The game could be frustrating and tense; therefore, I was physically intense (muscles tensed up) whenever I was encountering a particularly difficult puzzle in the game. The big objective in the game is to complete these obstacles without falling or dying. This objective proved intense in light of the obstacles presented in the game. This sensation relates to Gee's (2007) manipulation principle explained in 2.3.3. The game combines mind and body in that whenever my character was in a delicate spot, my body would tense up and I would figuratively be on the edge of my seat.

In terms of the mental experiences, there are two predominant things worth mentioning. The first relates to the nature of this research. In attempt to create good recording data, I felt the constant need to actively voice my thoughts throughout the game. This is a unique experience, because typically when playing games, these thoughts are silent, passively constructed, and never expressed. However this experience was relatively small in comparison to the mental experience of the gameplay. When playing the game, I often felt that the cultural learning experience is overshadowed by the gameplay. At one point, I voiced, "I feel like all of my mental energy is going to solving the puzzles and completing the obstacles, and nothing more." In fact, I felt discouraged about whether or not I was learning anything at all about the Iñupiat culture. However, this all changed when I entered phase two of the learning process – reflection.

5.3.2 Reflection

The second part of Kolb's experiential learning model is observation and reflection of the experience. For this case study that consisted of two things: 1.) watching the Cultural Insights and 2.) reviewing the gameplay recording.

Through watching the cultural insights, I started to feel like a learning experience was beginning to take shape. In these cultural insight films, members of the Iñupiat community discuss the various themes and artefacts presented in the game. However, these people never actually mention the game, instead they talk about their own experiences with these themes and artefacts, or they tell stories and relay information that their families have told them. For instance, about halfway through the game, Nuna receives a tool called the Bola (a throwing weapon consisting of weights and interconnected chords). When playing the game, the Bola was simply a tool to solve the puzzles. The significance of the Bola was not revealed to me until I watched the 2-3 minute cultural insight film that has Iñupiat people discussing how they used the Bola as a hunting tool in their culture (see Appendix 7). The effectiveness of the cultural insight films cannot be understated. They are essential to the learning experience and offer a reflective element about the various aspects, artefacts, and themes presented in the game.

As aforementioned, when playing the game I felt discouraged about whether or not I was learning anything about the Iñupiat people. Reflecting back on this emotion, I believe this exemplifies Gee's claim that videogames provide an alternate form of learning - one that is not

content-based (Gee, 2007). By the playing the game, I was essentially participating in a virtual social practice without any facts or information about the Iñupiat people. At first this caused a bit of anxiety because I am accustomed to learning in an institution that equates knowledge to facts. However, the cultural insights were effective because they shed light on things that I felt I had already experienced in the game. Therefore, the learning experience felt reversed and different from traditional schooling where it is content and facts first, and maybe the application of those content and facts in practice. This reverse learning experience felt more meaningful because I felt that I had already experienced it and that I already gained a frame of reference to look back on whenever I was introduced to new information about the Iñupiat people.

Equally important to the learning process was reviewing the gameplay. By combining the cultural insights and the gameplay review, the entire gaming experience transformed to something very different from phase one - the original experience of playing the game. When the reviewing the gameplay, I deciphered various themes that contributed to my learning experience. In the original experience, these themes were clouded the puzzle-solving element of the gameplay. Only upon observation and reflection, did these themes emerge.

To make sense of these themes, there are three categories: the virtual setting, the narrative, the characters and the artefacts.

The Virtual Setting

This category is exploring how the player's characters interact in the world. There are two main themes within this category: 1.) nature and 2.) not being alone.

In the game, the harsh natural environment not only creates a large part of the visual experience, but creates the biggest conflicts in the game (see Appendix 1, 2, & 5). The character faces both man-made and natural obstacles. However, the natural obstacles make up the majority of the challenges. And the reason why the man-made obstacles are obstacles is because nature has taken over and deteriorated the man-made structures (i.e. a roof of an abandoned house falling in under pressure) (see Appendix 8). The nature in the game feels alive in that there is a huge sense of unpredictability (See Appendix 1 & 9) – the ice cap could sink, the tree branch could break, the wind could blow the character over the ledge, the ground can shift, etc. Nuna is immersed in this nature and interacting with it as a small part in a greater force. The absence of

control is a prevalent element in this game. Furthermore, there is this sense that the nature is at it is, and Nuna must be the one to adapt to the harshness and unforgiving nature of the environment she is in. However, despite how dangerous this environment is for the characters, the artful aesthetic of this world conveys an element of beauty and sacredness. Hence, regardless of their danger to Nuna, the natural elements are sacred, have life, and are beyond the control of humans.

On the other hand, while Nuna is mainly isolated from other humans, she is never alone, as the game title implies. Even in the harshest conditions where humans dare not go, she is there facing the elements, and she is not alone. And although she cannot control nature and she is small in the grand scope of her surroundings, she is still connected to everything around her. First, the fox plays a large symbolic role in the game. This animal serves as her companion, helper, and friend. In fact, in the game, when one character dies, the level has to restart, like a "game over." The relationship between these two characters is also symbolic of the relationship between humans and animals, demonstrating how companionship can exist across species. In addition to the fox, there are also spirits that present themselves virtually everywhere and they assist Nuna when needed (see Appendix 10 & 11). For instance, if there is a gap that Nuna cannot jump, a spirit presents itself which allow Nuna to jump onto the spirit and cross the gap. However, these spirits only present themselves when the fox is present; and about halfway through the game, the fox gains the ability to control and manipulate the movement of these spirits, creating more variables for puzzle-solving.

To conclude, the virtual setting conveys the notion that not only do humans have life, but also animals and everything in nature has its own sacred life. And through this sense of aliveness, everything is connected, and therefore the character Nuna is never alone.

Narrative

The story of the game not only plays a huge role in how the game progresses, but it also contributes to the sense of inclusiveness the player feels when playing. As the receiver of this story, I felt like I was part of the community and that I was receiving knowledge, wisdom, and cultural heritage passed on by the elders. This felt like an important privilege. With this sort of storytelling, the story is not only a series of words, rather it is a piece of culture filled with

knowledge that is passed on from generation to generation. By listening to this story, I somehow participated in that legacy (see Appendix 4).

The story itself and the way it is told, feels like an epic, in that there is a hero (or heroine) that performs some valorous task in a vast setting, and for the benefit of his/her people. In this game, Nuna is the heroine and she voluntarily braves the treacherous environment in hopes to cease the never-ending blizzard that wreaks havoc on her village. In the end, she finds the source of the blizzard, ends the havoc, and reunites with her family. It is essentially a story of doing things for others, but entails many other parables throughout. The moral messages in these parables contain cultural values and knowledge about how the Iñupiat live together as a community and survive in the harsh environment they live in.

To conclude this theme, storytelling is how the community continues to survive successfully. Not only do these stories convey cultural knowledge and heritage, but they continue to bind the community.

Characters & Artefacts

Apart the virtual characters the player assumes, there are others characters in the game that play a part in the larger narrative. These characters consist of people, animals, and mythological creatures.

In addition to Nuna, there are two other humans in game that have a significance in the story. The first is the Owl Man (see Appendix 12). In the game, whenever Nuna reaches a new accomplishment point, an owl appears and flies away, meaning that the player has reached a new level. Connected to the owls is the Owl Man who appears a few levels into the game. He calls Nuna his granddaughter and says that he has been watching over her (through the owls). He represents an elder figure of this community. He is distraught because his drum is stolen and claims that he could help Nuna if only he had the drum. Nuna eventually retrieves the drum, and gives it back to the Owl Man. After reclaiming his drum, he dances, beats the drum, and chants happily. He also gives Nuna the Bola, an artefact which assists her in her quest to finding the source of the blizzard.

The cultural insight revealed that the drum has a large significance and it is often called the heartbeat of the community. As an artefact, it represents life, vitality, and the oneness of

everyone in the community. In the game, the Owl Man without his drum is temporarily isolated from the community and in such a state, he cannot assist Nuna. Only once he retrieved the drum, could he help Nuna in her journey.

The appearance of the Owl Man takes place after the Manslayer (the second human character) who destroys Nuna's village. He is the only ugly figure in the game and he represents a disruption of order (see Appendix 13 & 14). According to the cultural insight video about the Manslayer figure, he demonstrates what happens when people act only for themselves. In the game, the Manslayer represented chaos and destruction. Nuna eventually defeats him restoring the order of the community.

The animal characters include the fox, the owls, a whale, and the polar bears. As previously explained, the fox is symbolic for human and animal companionship. However, not all of the animal characters in the game are companions. For instance, the polar bears pose a threat to Nuna throughout the game (see Appendix 15). She has to run from them, outsmart them, and overall do everything in her power to escape from them. Yet despite the fact that the polar bear is a danger, it is still a beautiful creature in the game and it is beyond the capabilities of Nuna to harm the bear. When playing the game, I felt a sense of sadness for the bears whenever they failed and ended up in a worse situation. For example, in outsmarting the bear, Nuna trapped it and it fell into the freezing water, unable to get out. At that moment in the game, I exclaimed "poor bear". This sentiment of sympathy on my part was later reinforced and explained in one of the cultural insight videos. It is explained that regardless of the danger the bears pose to humans, they are protected, treated with respect, and are considered as equals by the community.

The final characters are the mythological creatures. There are two presented in the game: the little people and the large ice giant (otherwise known as Kunuuksaayuka). The little people were portrayed as mischievous trouble-makers that like to wreak a bit of havoc (see Appendix 16). In the game, not much is presented about these characters; however, the cultural insights reveal that the little people are common folklore in the Iñupiat culture. The second creature is the large ice giant which is the source of the blizzard that appears as the "final boss" at the end of the game (Appendix 17). This creature uses an adze (axe tools) to break off snow and when he shovels the snow he has broken, it causes a blizzard that extends to Nuna's village. Rather than defeating the giant, she breaks the adze which ceases his work and causes him to laugh and sing

in rejoice. The giant in this story is the physical embodiment of a natural force and illustrates that humans are not the largest force or source or power in the world.

Overall the various characters and artefacts give the player cultural perspectives and teach lessons about how the community interacts internally as a unit and externally in nature.

5.3.3 Conceptualization

As the third step in the learning process, one must conceptualize or make sense of the observation. For this case study, I will synthesize the information found in the observation of the case in order to answer the question of "What did I learn about the Iñupiat culture through this videogame?"

Before answering this question, it is important to clarify that this game is the only platform of information I used to learn about this culture. I did not read about this culture online or learn about the Iñupiat people through any books or movies at any point during this thesis. Everything presented is based on this videogame.

Therefore, what did I learn about the Iñupiat culture?

Synthesizing everything revealed in phase two, some key themes emerge that conclude my cultural learning experience. The main things I learned can be labeled as cultural values, and with these values a certain perspective on the world is constructed.

The first value is beauty. By beauty, I do not mean physical attractiveness or how this term is perceived conventionally. By this term, I mean that everything is alive, has its own inherent spirituality, and maintains some sort of sacredness. In the Iñupiat culture, their livelihood is immersed in nature, and therefore everything is perceived as having a consciousness. In the game, everything is visually beautiful (i.e. the characters and the setting) and regardless of what sort of danger it poses to the character, everything feels sacred and sentient. In fact, the only ugly figure is the Manslayer which represents destruction of everything sacred.

The second value is belonging. Interconnectedness is a prevalent value that emerges in the game. Whether it is about the connection to animals, nature, or each other as a community, the Iñupiat community views the world as interconnected across all forms of life and existence. It is for this reason, Nuna is never alone, for she is a part of everything.

These two values coexist to suggest that everything is connected through beauty (aliveness). These values also serve as the foundation for their livelihood and their community practices. Through these values, the Iñupiat people have continued as a successful community in such a harsh environment.

5.3.4 Application

The last step of the learning process is application – applying what I have learned to future experiences. Therefore after making sense of my observations, I must consider the applicability of what I have learned.

The application step of the learning process in this case study is two-fold. First, I consider what I have learned about the Iñupiat people and what they means to future learning experiences. The second consideration is centered on my learning experience through a videogame.

As for the first consideration, I learned about the Iñupiat culture by first gaining perspective and then by gathering facts and information. This is a reversed method of learning that differs from traditional schooling. The game is based on a narrative, it captures the imagination of the narrative and allows the player to interact within the perspective of that narrative. In other words, the player experiences the virtual world through the perspective of the Iñupiat values. Only after having that experience can the player gain more knowledge through content (i.e. facts, information, and more narratives). This proved to be extremely effective as a cultural learning experience for two reasons. First, it built a frame of reference that I could come back to whenever I encountered new information about the culture. I believe that either way (game first, facts second – facts first, games second), I would have had a meaningful learning experience. If I had simply learned facts about the culture without the game I would not have any frame of reference through which I could place that information in context. This point relates to the gap between information and real-world contexts in education. This gap has been addressed in this thesis along with various works from philosopher John Dewey (1938) to videogames researcher, James Paul Gee (2007). Second, it allowed me to interact in a world through different perspectives and conventions. Part of having high intercultural competence, is having the ability to expand one's worldview and be able to shift in and out of various cultural viewpoints about the world (Bennett, 2004). However, in order to gain intercultural competence, one must be

exposed to various cultural viewpoints and perspectives about the world. To create such a learning experience in a classroom can pose a great challenge to an instructor. Typically in intercultural learning, this task requires traveling or interacting personally with people from the cultures one wishes to gain perspective on. Other methods include books and movies that contain some sort of narrative that reveals these perspectives, yet these prove less effective in comparison to traveling and so on. Yet I was able to interact with a virtual world and gain a new cultural perspective about the world through 3 hours of gameplay. This is arguably an incredible feat by the game makers considering my knowledge about the culture prior to playing the game and the frame of reference I have as an American in Eurocentric education institutions.

Therefore, the applicability of this experience suggests that cross cultural learning must contain some sort of experience in which to gain cultural perspectives about the world. In other words, facts alone are not enough, one must "see the world through their eyes" and then use that perspective as a reference point for understanding the culture. In videogaming, Gee calls this the cultural models principle and explains that games present various types of conventions and ways of living very well (Gee, 2007: pg. 139). For instance, in the game *Fable,* the player has the option of being a good character or a bad character, both having their own implications and storylines. With this game, players can experiment with different perspectives about the virtual world while still maintaining their own conventions and moral compass in the real world. In the game *Fable,* if a player choses to be bad, it does not mean that they accept the morality and conventions of the character's choices in the real world, rather they simply interact with a different perspective. Videogames are good at offer various cultural models that allow players to act in virtual spaces that have been constructed by foreign (or unconventional) perspectives.

The second consideration of applicability involves my learning experience through a videogame. The main takeaway that can be applied to future experiences is that the game itself is not enough as a learning experience, rather the gamer must carry out all 4 steps of the learning process in order to create a learning experience from the videogame. This however does not apply to videogames that are educational in nature (i.e. content games like math, science, history, etc.). I am referring to games that have some sort of narrative and as a medium, function similarly to books and movies. By actively carrying out each of the four steps, I realized that above all, a reflective platform is crucial to the learning experience of games like *Never Alone.*

Without the reflective platform, the experience was reduced to 3 hours of puzzle-solving. This takeaway is something that I wish to convey to the intended audience of this thesis – educators. Educators considering implementing videogames into classes and curricula cannot neglect the four-step process of learning or the rich reflective platforms that reinforce the learning experience of the game.

5.4 Analysis conclusion

Table 5 below summarizes the findings of each of the four stages of this analysis.

Table 5 – *Never Alone* Case Study Analysis Conclusions using Kolb's experiential learning model.

<table>
<tr><th colspan="3">Experience</th></tr>
<tr><td colspan="3">While playing the game, I did not learn much about the Iñupiat community or culture apart from a few characteristics (what they wear, where they live, etc.). Instead my experience was limited to various sensations and mental experiences.</td></tr>
<tr><th colspan="2">Sensational Experiences</th><th>Mental Experiences</th></tr>
<tr><td colspan="2">1.) Visually: The 2D world in the game is aesthetically beautiful.

2.) Audio: The noises (tree-branch breaking) depict the harsh setting of the game.

3.) Audio: The narrator telling the story in the Iñupiat language.

4.) Physical: Muscles tensed up during particularly challenging puzzles.</td><td>As the player, I often felt that the gameplay overshadowed the learning experience.</td></tr>
<tr><th colspan="3">Reflection</th></tr>
<tr><td colspan="3">Only upon reflection was I able to construct a learning experience. In the reflection phase, I began to see how all of the elements of the game came together to create a specific cultural experience for the player. Each aspect of the game is meant to reveal something about the Iñupiat culture and their beliefs/values</td></tr>
<tr><th>The Virtual Setting</th><th>Narrative</th><th>Characters and Artefacts</th></tr>
<tr><td>1.) Nature: The nature in the game is dangerous yet beautiful, alive, and sacred.

2.) Never Alone: Although Nuna is isolated from others, she is never alone in her setting. She has her animal companion and spirits to help her.</td><td>For the player, the narrative allows the participant to take part in the cultural legacy as a member of Iñupiat community. Through this story, cultural knowledge, heritage, and values are passed from one generation to the next.</td><td>1.) Characters: each character represents a value in the Iñupiat culture. For instance, the Owl Man represents community and cultural wisdom. The Manslayer represents the greed and the destruction of the community. The animals represent companionship and the belief that all living things deserve respect and protection.

2.) Artefacts: the artefacts reveal the Iñupiat way of life and the tools/objects the people used to thrive as a community in their harsh environment.</td></tr>
</table>

Conceptualization	
In the conceptualization phase, I synthesized everything that I revealed in the reflection phase and constructed main takeaways. In other words, I answered the question, "What did I overall learn about the Iñupiat culture?"	
The value of Beauty Everything is alive, has its own inherent spirituality, and maintains some sort of sacredness.	The value of Belonging Interconnectedness is a prevalent value that emerges in the game. Whether it is about the connection to animals, nature, or each other as a community, the Iñupiat community views the world as interconnected across all forms of life and existence.
Application	
In the application phase, I considered how what I learned can be applied to future contexts. I considered two aspects: 1.) How can this cultural learning experience be applied to future cross-cultural learning? 2.) What does this experience reveal about using videogames as a platform for cross-cultural learning?	
Aspect 1: Cross-cultural learning must contain some sort of experience in which to gain cultural perspectives about the world. In other words, facts alone are not enough, one must "see the world through their eyes" and then use that perspective as a reference point for understanding the culture.	Aspect 2: The main takeaway that can be applied to future experiences is that the game itself is not enough as a learning experience, rather the gamer must carry out all 4 steps of the learning process in order to creating a learning experience from the videogame.

Table Content Source: *Based of Kolb's (1984) experiential learning theory from (Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall.)*

VI. RESULTS AND CONCLUSION

6.1 Summary of findings & limitations of this case study

This section concludes the analysis by summarizing the findings and expressing the ways in which this case study is limited and/or problematic.

The first finding is that, as this case study suggests, using videogames as a learning tool requires guided reflection. In fact, for this case it was essential. Second, Kolb's experiential learning model proved effective not only for analysis of this case study, but also for constructing a learning experience based on a videogame. Third, in cross-cultural learning, videogames offer experiences or cultural models that allow players to see a virtual world through different perspectives (Gee, 2007, p. 139). This creates a symbiotic relationship between experience and information where the player can then take cultural knowledge and place it within the frame of reference that is created through the videogame, thus constituting an active learning experience.

Therefore, in effort to answer my research question, this case study shows that with the four-step learning process, videogames can serve as a platform for enhanced cross-cultural learning. The *enhanced* description meaning that the videogame creates an active learning experience that is superior to content-based, cross-cultural learning (learning about cultures through facts and information).

Limitations of the Study

1. The biases aforementioned affect the reliability of this case study. To elaborate, I sought a cross-cultural learning experience beforehand.
2. I, as a participant, have high intercultural competence according to Milton's DMIS scale (Bennett, 2004). I am capable of expanding my world view and viewing the world from various perspectives. Therefore just because I am able to construct meaning from the cultural expressions of the game, does not mean that everyone can.
3. There is no way of telling whether or not the cultural lessons I learned are accurate in reference to the Iñupiat people, unless I asked members of this community.

6.2 Conclusion

The main conclusions from Chapter 2 indicate that videogames are barely emerging as a new media. Many videogame researchers agree that videogames are in the infancy of their existence and that their potential has yet to be demonstrated to the market. As demonstrated in the game *Never Alone*, despite the novelty of game being a means of real-world cultural expression, the game itself was constructed through an unoriginal gaming model that has been featured in many games prior. This reinforces the claim that the gaming industry only creates what has proven to be economically successful in the past and thereby creating games that follow generic game-model recipes.

Chapter 2 also suggests that given its infancy as a medium, the scientific community still does not know the role videogames play in society and what effects they have on the people who play them. In fact, section 2.3 showed that videogames are still ill-defined and conceptualized by the scientific community.

However, as outlined in chapter 3, despite the novelty of its existence, videogames offer two things to educators:

1. They are built of solid learning principles. By taking these principles and applying them to the classroom, either through videogames or other methods, students can learn in a manner that is more effective and natural to how learners acquire new knowledge and information.
2. They can bridge the gap between information and real-world contexts. As demonstrated in the case study, whenever a learner has the information, but the context is absent, the result is impaired learning. Traditional education focuses too much on content, information, and facts, and not enough about the social practices that are associated with the content. Since videogames can offer limitless possibilities for constructing virtual social practices, they are great tools for educators attempting to bridge the gap.

Chapter 5 demonstrated models that work with learning through videogames. Overall it is crucial to facilitate learning by offering guided-reflection through which the learner can place what they have learned in the context of their gaming experience.

Therefore, educators considering implementing videogames in lessons or curricula, should not neglect the reflective experience of playing the game. I demonstrated this in the case study using Kolb's four-step process of experiential learning (Kolb, 1984). Complementing Kolb, in their work, *Paper Mirror: Understanding Reflective Journaling*, Delaura Hubbs and Charles F. Brand (2005) explained that learners can progress through reflective journaling as a tool to facilitate reflection in Kolb's (1984) four-step learning process. Hubbs and Brand (2005) explained that learners in stage one describe their experience through journaling, and in stage two, reflect on those experiences also through journaling. The teachers at this point can prompt the reflection by offering reference points or reflection questions. In the last two stages, the learners can start to make sense of what they learn and begin to interpret and construct new meanings or understandings of the experience.

For teachers, journaling throughout these four stages as suggested by Hubbs and Brand (2005) can serve as a methodological approach to incorporating videogames in lessons. As found in my own case study, without teacher guided reflection, the learners may be led astray and misinterpret their own experience (Gee, 2005).

Reinforcing this claim is Mike Barnett and Janice Anderson (2013), who claim that simulation videogames can lead to positive learning outcomes. This study consisted of two student groups and the group that learned physics through simulated videogames performed better than the ones who did not learn through a simulated gaming platform. Their study however suggests that with videogames and hands-on activities, guided reflection can serve as a learning framework for students and ensure that the students are engaged in the learning experience of the game (Anderson & Barnett, 2013).

Chapter 5 also demonstrated a case in which a videogame was used as a tool for cross-cultural learning. As expressed in the introduction of this thesis, educators are challenged with creating institutions that fully address the challenges and implications of globalization in the 21st century. This entails fostering learners' abilities to grow their intercultural competence and cross-cultural awareness. However, to reduce the experiences of the world and the people it contains to a single classroom poses great challenges to educators. In addressing this challenge, videogames, if they are well made, can assist in these initiatives, provided that the teachers offer reflective activities to supplement the gaming experience.

6.3 Suggestions

While the scope of this research is quite narrow, it does reveal an interesting question about the platform utility of videogames as means to present various human perspectives about the world. In books and movies, the participant is offered constructed viewpoints through the characters of the medium. Unlike books and movies however, in videogames, the player interacts with this viewpoint and explores the world through a virtual character that is a projection of the player. Therefore, in terms of cross-cultural learning or any learning that requires a shift of perspectives, videogames offer a lot of potential. Furthermore, the game industry as it exists focuses on videogames for entertainment (a focus that has proved lucrative to game publishers). Therefore it is worth exploring the potential of videogames for experiential education.

This entire thesis has insisted that educators consider videogames seriously as supplemental learning tools in the classroom. Furthermore, it is important to note that videogames will be an essential medium in 21st century learning. Yet videogames are not only important to educators, but they should also be considered by parents and gameplayers in general. As addressed in Chapter 2, videogames have a bad reputation in the general public, but the case against videogames has been refuted time and time again by videogame researchers. Parents of children playing games ought to be more active in their children's gaming experience. This could entail prompting conversations about topics like what he/she is experiencing in the game, why he/she makes certain decisions, and how he/she feels about what happens in the game. This same suggestion holds true for gameplayers who play for entertainment and do provide themselves with a platform through which to reflect and analyze their gaming experience. Overall, as a society, we have to rethink how we use videogames in our lives, and shift away from thinking that videogames are solely entertainment, to considering them as a platform for learning that remains to be seen in the 21st century.

REFERENCES

(n.d.). Retrieved from Never Alone Game: http://neveralonegame.com/

Abt, C. (1970). *Serious Games.* New York: Viking Press.

Anderson, C. A. (2001). Effects of violent videogames on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior - a meta-analytic review of the scientific literature. *Psychological Science, 12*, 353–359.

Anderson, J., & Barnett, M. (2013). Learning Physics with Digital Game Simulations in Middle School Science. *Journal of Science Education & Technology*.

Avedon, E., & Sutton-Smith, B. (1971). *The Study of Games.* New York: John Wiley and Songs Inc.

Bennett, M. J. (2004). *Becoming interculturally competent.* Portland : The Intercultural Development Research Institute.

Caillois, R. (1961). *Man, Play, and Games.* Urbana: University of Illinois Press.

Connolly, T. M. (2012). A systematic literature review of empirical evidence on computer games and serious games. *Computers and Education (59) 2*, 661- 686.

Costikyan. (1994). *I Have No Words & I Must Design: Interactive Fantasy 2.*

Crawford, C. (1982). *The Art of Computer Game Design.* Berkeley: McGraw-Hill.

Demarrais, K. B. (1999). Theoretical and Historical Overview of the Purposes of Schooling. In *How Schools Work: A Sociological Analysis of Education* (pp. 1-33). New York: Longman.

Frasca, G. (2003). Ludologists love stories, too: notes from a debate that never took place. *Digital Games Research Conference*.

Gee, J. P. (2005). Why Are Videogames Good For Learning?

Gee, J. P. (2007). *What Videogames Have To Teach Us About Learning and Literacy.* Palgrave McMillan.

Gee, J. P. (2008). Good Videogames, the Human Mind, and Good Learning. In J. P. Gee, *Good Videogames + Good Learning* (pp. 22 - 44). New York: Peter Long.

Hubbs, D., & Brand, C. F. (2005). Paper Mirror: Understanding Reflective Journaling. *Journal of Experiential Education*.

Huizinga, J. (1938). *Homo Ludens: A Study of Play-Element in Culture.* London: Routledge.

Jenkins, H. (2005). *Games, The New Lively Art Form*. Retrieved from MIT Henry Jenkins: http://web.mit.edu/21fms/People/henry3/GamesNewLively.html

Jenkins, H. (2005). *Reality Bytes: Eight Myths About Videogames Debunked*. Retrieved from PBS: http://www.pbs.org/kcts/videogamerevolution/impact/myths.html

Juul, J. (2003). The Game, the Player, the World: Looking for a Heart of Gameness. *Level Up: Digital Games Research Conference Proceedings*, 30-45.

Kelley, D. (1988). *The Art of Reasoning.* New York: W. W. Norton & Company.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development (Vol. 1).* Englewood Cliffs, NJ: Prentice-Hall.

McCarthy, N. (2015). *America's Favorite Video Game Genres* . Forbes.

McLuhan, M. (1964). *Understanding Media: The Extensions of Man.* New York, NY: McGraw-Hill.

Mead, G. H. (1934). *Mind, Self, and Society - From The Standpoint of A Social Behavioralist.* Chicago: University of Chicago Press.

Murray, J. H. (2005). *Inventing the Medium - Humanistic Design for an Emerging Medium*. Retrieved from The Last Word on Ludology v Narratology : https://inventingthemedium.com/2013/06/28/the-last-word-on-ludology-v-narratology-2005/

Newman, J. (2008). *Playing with Videogames.* London & New York: Routledge Taylor & Francis Group.

Nielsen, S. E., Smith, J. H., & Tosca, S. P. (2008). *Understanding Videogames.* New York & London: Routledge Taylor & Fancis Group.

Parlett, D. (1991). *The Oxford History of Board Games.* Oxford: Oxford University Press.

Phan, M. H. (2011). *Video Gaming Trends: Violent, Action/Adventure Games are Most Popular.* Wichita State University: Software Usability Research Laboratory.

Piaget, J. (1951). *Play, Dreams, and Imitation in Childhood.* Oxen: Routledge.

Ryan, M.-L. (2001). *Beyond Myth and Metaphor – the case of narrative.* Game Studies. The International Journal of Computer Game Research.

Salen, K., & Zimmerman, E. (2004). *Rules of Play - Game Design Fundamentals.* London: The MIT Press.

Suits, B. (1978). *Grasshopper: Games, Life and Utopia.* Toronto: University of Toronto Press.

United Nations Educational, S. a. (2014). Global Citizenship Education. Preparing Learners for the Challenges of the 21st Century. Paris.

University, A. S. (Producer). (2013). *Jim Gee Principles on Gaming* [Film].

APPENDICES

Appendix 1 - Setting in the game *Never Alone*

Appendix description - *The main character Nuna and her fox companion braving the harsh Alaskan environment. The subtitles at the bottom, "The ice was unpredictable" were part of the translated narrative in the game.*

Appendix 2 – Setting in the game, *Never Alone*

Appendix description - *The main character Nuna and her fox companion braving the harsh Alaskan environment.*

Appendix 3 – Main characters, Nuna and her fox companion in the game *Never Alone.*

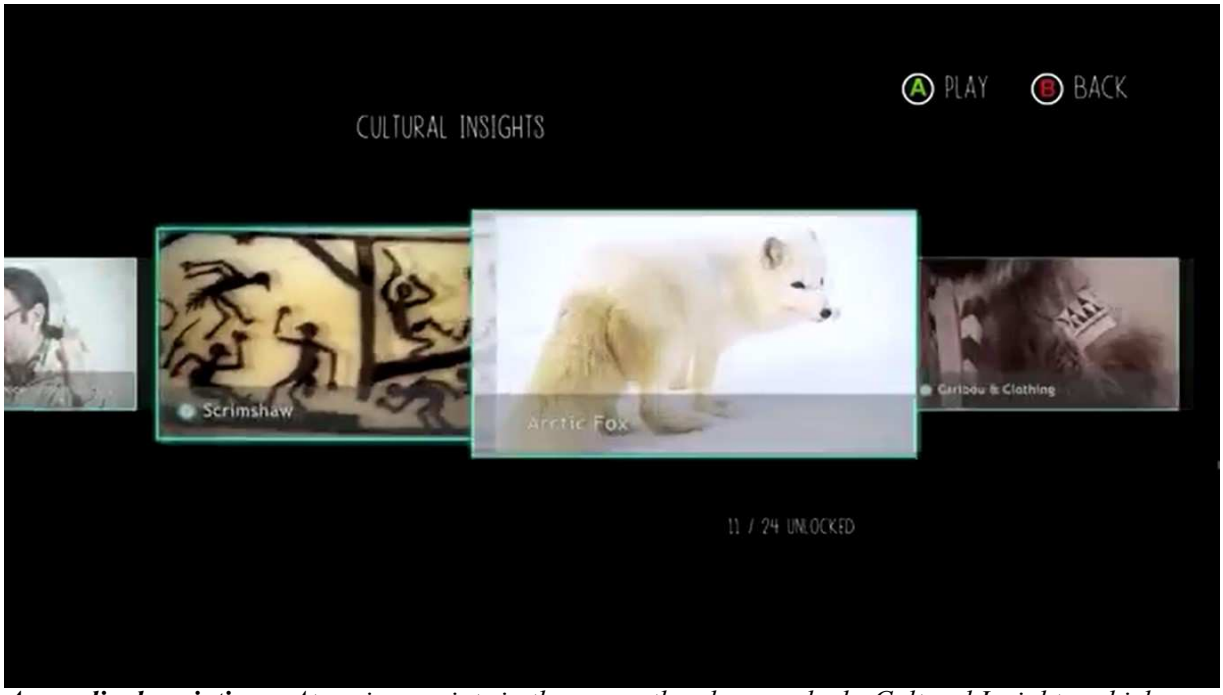
Appendix 4 – The *Never Alone,* narrative.

Appendix description *– At certain points in the game, there are animated cut-scenes which reveal a new part of the narrative in the game. Since the narrator speaks in the native language, the story is translated into subtitles. Portrayed here is the main character of the story, swinging a Bola.*

Appendix 5 – Puzzle-solving in the game *Never Alone*

Appendix description *– Nuna must get from the tree ledge to the cliff edge. To do so, she must recruit assistance from the spirits, the fox, and use the Bola to get through the obstacles.*

Appendix 6 – Cultural Insights in *Never Alone*



Appendix description *– At various points in the game, the player unlocks Cultural Insights, which are mini-documentary films that feature members of the Iñupiat community discussing various themes and artefacts presented in the game. The cultural insight videos can be accessed through the Start Menu of the game.*

Appendix 7 – Cultural Insight Films in the game *Never Alone*

Appendix description *– Image from the Cultural Insight film about the Bola – the weapon Nuna uses in the game.*

Appendix 8 – Man-made structures in the game *Never Alone*

Appendix description *– Not only are the man-made structures in the game run down by the harsh weather and environment they are situated in, but they represent an iconic architecture of the Iñupiat people. These houses are built on stilts on a cliff-side and are imitations of the structures located in King Island, Alaska.*

Appendix 9 – Unpredictable setting in the game, *Never Alone*

Appendix description *– The setting itself moves in unpredictable ways and in the game, the nature has a mind of its own. Portrayed here is Nuna trying to interact with the ever-changing ice caps.*

Appendix 10 – Spirits in the game *Never Alone*

Appendix description - *In the game, Nuna must traverse the environment and cross many gaps. With the fox, she can summon spirits to help her cross gaps she could not cross otherwise. Depicted here is Nuna and the fox crossing a gap with the help of a spirit.*

Appendix 11 – Spirits in the game, *Never Alone*

Appendix description - *In the game, Nuna must traverse the environment and cross many gaps. With the fox, she can summon spirits to help her cross gaps she could not cross otherwise. Depicted here is Nuna and the fox crossing a gap with the help of some spirits.*

Appendix 12 – The Owl Man in *Never Alone.*

Appendix description *– The Owl Man (right), represents an elderly figure of the Iñupiat community.*

Appendix 13 – The Manslayer in *Never Alone*

Appendix description – *The Manslayer represents destruction and disruption of order to the Iñupiat people.*

Appendix 14 – The Manslayer in *Never Alone*

Appendix description – *The Manslayer represents destruction and disruption of order to the Iñupiat people. Depicted here is the Manslayer destroying Nuna's village in one of the game's animated cut scenes.*

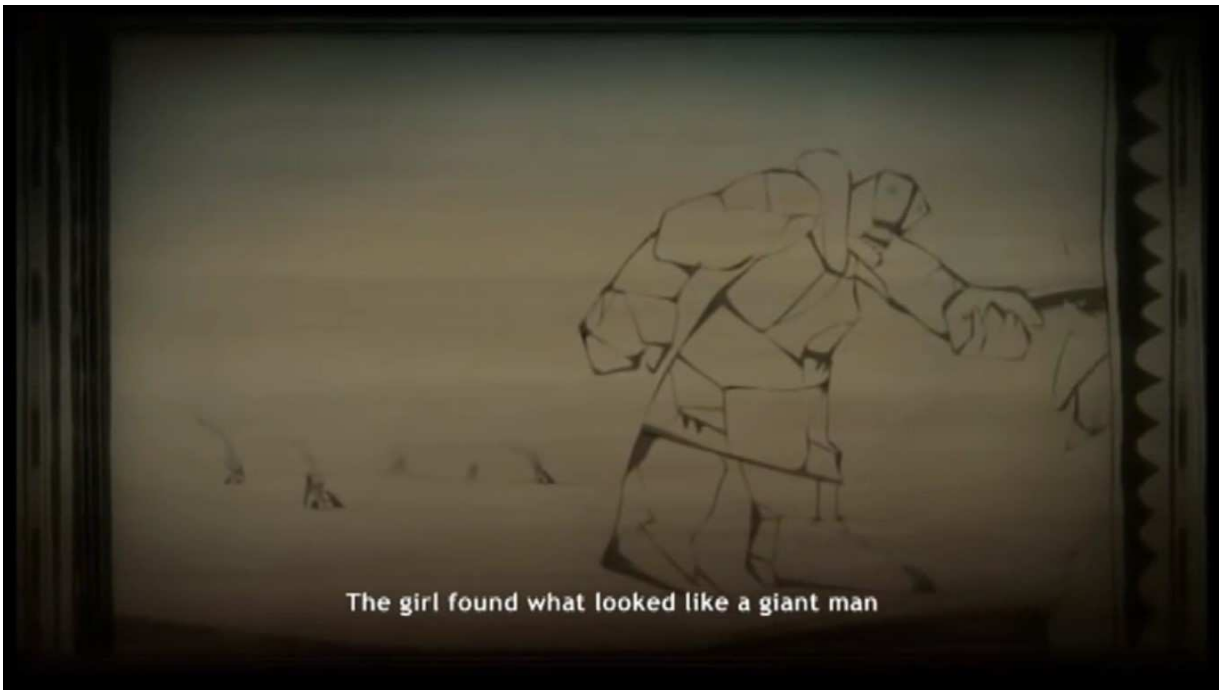
Appendix 15 – The polar bear in *Never Alone*

Appendix description – *Although the polar bear poses a great threat to Nuna, the bear cannot be harmed by the characters in the game. Depicted here is Nuna cornered by the bear and the fox coming to her rescue. In the Iñupiat community, polar bears are respected and protected.*

Appendix 16 – Little people in *Never Alone*

Appendix description – *Depicted here are the mythical Little People in the game.*

Appendix 17 – The large ice giant in *Never Alone*



Appendix description *– Depicted here is the animated cut-scene showing the ice giant (the source of the blizzard).*