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IMPACTFUL INTERACTIVITY WITHIN VIDEO GAMES

by

Luke Maeser

Submitted in Partial Fulfillment of the Requirements  
for the Degree of Master of Arts in Game Design  
at  
Lindenwood University

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IMPACTFUL INTERACTIVITY WITHIN VIDEO GAMES

A Project Report Submitted to the Faculty of the College of Arts and Humanities  
in Partial Fulfillment of the Requirements for the  
Degree of Master of Arts  
at  
Lindenwood University

By

Luke Robert Maeser

Saint Charles, Missouri

December 2023

## ABSTRACT

Title of Thesis: Impactful Interactivity within Video Games

Luke Maeser, Master of Arts, 2023

Thesis Directed by: Jerimiah Ratican, Professor, Game Design

Despite half a centennial of existence and enticing artistic qualities, conclusive evidence does not exist as to if video games are beneficial to learning or costly. Exploring the notion of benefit versus cost, it is important to identify the value of video games when leveraged as tools for learning as traditional educational methodologies are not infallible. The video game project *Alone* demonstrates video games can generate psychological responses; therefore, one must conclude learning has occurred. *Alone* encompasses the following: meaningful interactivity within video games (regarding narrative and gameplay), video games as educational tools, video game development (including design), and potential emotional and psychological effects associated with their use. Through researching viewpoints from multiple disciplines, the potential for video games to impact players in significant ways is analyzed. As new educational mediums become available, they should be embraced if they can benefit learning. Video games having unique potential to other artistic mediums and learning methods is asserted.

*Keywords:* digital humanities, educational tool, immersive experience, impactful interactivity, psychoanalysis

## **Dedication**

To my loved ones.

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## Introduction

Devoid of real-world hazards, video games are an art form capable of telling stories in virtual environments. They have the potential to evoke emotions and psychological responses through interactivity, fostering learning. By utilizing articles analyzing video games and educational systems in tandem with articles on game design and narrative within video games, the educational ability of video games and effects possible through their interactivity is illustrated within the video game project *Alone*. Although not always successful in execution, video games are educational tools capable of psychological impact, capable of providing interactive narrative, problem-solving opportunities, and exposure to life's challenges.

Leveraging game design knowledge in conjunction with peer-reviewed academic resources, *Alone* explores meaningful incorporation of player choice. Highlighting the artistic and educational significance of video games, *Alone* displays they are more than casual social activities and must be taken seriously. Game-induced emotions and psychological responses such as guilt lose potency without choice. Considerable player involvement is essential to player-character action promoting feelings of responsibility and effectively educating.

## Literature Review

Beginning with a comprehensive examination of the industry's growth in the 1980s, Kevin Brooker analyzes various facets of video game development and the process of becoming a video game designer in "Making the Best Quest List" (Brooker, 2013). Seeking to provide an enlightened (albeit brief) history lesson of the video game medium, Brooker reflects on the immense cost (financially and in terms of labor) of developing video games. Video games are no longer an arcade activity for adolescents but a high revenue-generating industry with dedicated academic programs serving to educate the next generation of game developers.

During the medium's adolescence, video game designers held various educations not specific to game design, such as film animation. However, as the industry developed, game design became an academic field. Focusing on education, Brooker discusses the programs and skills now required for access and success in the field. An understanding of technology, mathematics, and art have become cornerstones of video game design. According to Avrim Katzman, Coordinator of Game Design at Sheridan College, in Oakville, Canada, "Students in game design often think it's all fun, and soon begin to realize it's fun having fun, but making fun is hard work. It can be tedious" (as cited in Brooker, 2013, p. 028). Video game development is a laborious career requiring vast amounts of time and energy. Regardless of possible stigmatization, the effort required warrants appreciation as a serious artistic and technical accomplishment.

Despite controversy existing since its inception, there is another source of evidence suggesting video games should be considered forms of art with beneficial qualities. In the article "Game On! Teaching Video Game Studies in the Arts Classroom," Stephanie Veronica Martyniuk (2018) debates the notion of video games benefiting or harming a player and their



status as a form of art. Intrigued by this 40-year-old debate, Martyniuk endeavors to definitively prove video games are forms of art with educational value. Their intentions do not exclusively pertain to ending the debate as they argue there is a bigger question at stake. For example, scholar Ryan Patton illustrates that, over the last 40 years, games of various forms (such as memory games) have been leveraged in education (Patton, 2015). As Martyniuk argues, the question of video games being an art form with potential to educate is irrelevant. Their existence is validation. The real question is how they can best be leveraged as tools for learning.

Reflecting on other technological mediums intertwined with modern society (such as cellular phones and laptops), Martyniuk (2018) highlights the inevitability of video games reaching a similar status if not already achieved. In light of mass acceptance, Martyniuk concludes the contested status of video games is an antiquated notion hindering learning and must evolve. Referring to a quote by Dr. Kerry Freedman, a Professor of Art and Design Education, “Are we not, as art educators, responsible for teaching all aspects of technology?” (Freedman, 1997, p. 11). In parting, Martyniuk directs these words to educators, proclaiming an educators’ mission is to provide students a modern education and embrace the evolving landscape of technology. With the appropriate facilitation of a teacher, a student could navigate a video game academically, extracting knowledge both consciously and unconsciously.

Illustrating how video games may be integrated within education, Jonathan Kinkley (2009) reviews evaluations of computer-assisted art history curriculums relative to those lecture-based at the University level. According to the editorial board of *Art Journal* (citing research from the National Training Lab in Bethel, Maine), the commonly practiced “lecture method of teaching produces the lowest learner retention rate” (“Art History Survey,” 2005, p. 36). In the digital age, various teaching methods are becoming antiquated. For example, students are

intimately familiar with navigating technology, finding manual reading an unappealing learning method. Enter interactive technology as a tool for learning, a tool with proven success inside undergraduate art history programs (Cason, 1998).

Discussing the emergence of games as tools for learning, Jason Cox (2014) looks to role-playing games (RPGs) to ascertain educational merit. Leveraging personal experience, Cox explores both a traditional academic setting, as well as curriculums within art education, to understand potential educational application of games. While not all games are virtual, the concepts employed within them are largely the same. Regarding RPGs virtual or non-virtual, a player or group of players assume a role within an imaginary world confined by a defined framework of rules. Virtual games, synonymous with video games, expand upon the imaginary aspect of non-virtual RPGs by providing visualization with 3D virtual environments and potential for social interaction. Independent of medium, RPGs are unpredictable (as their existence is shaped by human involvement), providing new and endless opportunities. In addition to entertainment, RPGs allow for examination of a state of being and an expression of opinions relating to the real world, all within a safe imagined environment.

As in other art forms, RPGs evoke emotions and encourage self-analysis in a uniquely visceral manner. Cox highlights the value of games and their impact on players, as RPGs blur reality from fiction and assist in the development of empathy for others. The notion of recognizing the educational value of video games is not exclusive to Cox's work as, similar to his analysis, Teachers College at Columbia University is actively researching the educational potential of games (Games research lab, 2013). Cox's article demonstrates how video games function as tools for learning, providing new and unique educational opportunities both visible and measurable.

Even games designed without intention to foster learning have learning potential. In the article “Gamifying Reality: How Should History Intersect with Fantasy,” author Marko Suvajdzic (2016) effectively communicates the concept of video games as a highly efficient method of stimulating learning, regardless if they were designed to do so. Assessing the state of video game research (the majority of which focuses on video games designed to promote and support learning) and looking to other video games for evidence, Suvajdzic pursues games not explicitly designed with the intention of teaching to assess educational merit. Suvajdzic makes an important conclusion: even games not primarily designed for learning have value as indirect teachers capable of providing education throughout their gameplay in mindful and unintentional ways. The only difference between intentional and unintentional learning is what the player learns and how the player processes and stores this information. Although video games are a new form of games, games have been a source of entertainment and learning for thousands of years. As a more sophisticated form of games, video games amplify these abilities.

In addition to educational merit, Marissa D. Willis (2019) explores the notion video games are unique and notable forms of interactive fiction in the article “Choose Your Own Adventure: Examining the Fictional Content of Video Games as Interactive Fictions.” In this article, Willis argues against an influential model of fictional truth established by Kendall Walton, arguing the model doesn’t account for all fictional truth present in video games. Walton defines all “representations,” even portrait paintings, as fictions (Walton, 1990, p. 3). Willis disagrees with this broad approach, taking into account the inherent philosophical obstacles existing within fictional truths present in video games. The author first defines fictional truth as facts about fictional media. For example, Detective Sherlock Holmes lives at 221B Baker Street, London, but in reality, he cannot be found there as his existence is fictional. Using this definition

as a framework, the author creates new vocabulary arguing video games contain two different types of fictional truths: playthrough and video game-truths. The former relates to truths specific to a given playthrough. These truths may be absent in another player's playthrough, as they are not truths of the game itself. An example of a playthrough-truth for a video game where the player controls an animal; preoccupied with another task the player left the game active and animal player-character stood motionless for a period of time. However, another player may complete the game without hiatus resulting in animal player-character never standing still for any significant duration. The latter type of fictional truth refers to truths present in the game itself, as they are fictionally true in every possible playthrough of the game. In the fictitious example, a video game-truth is the player-character is an animal.

Despite disagreement from Martin Ricksand on the distinction between playthrough and video game-truth, Willis (2020) is resolute in their vocabulary. Ricksand suggests a distinction of fictional truths is incorrect. Willis wonders if Ricksand fully appreciated their distinction as much of their argument was disregarded. To illustrate their point, Willis refers to players failing a video game level and watching their characters die on screen before being sent back in the level to try again. Although the game truth may be the player-character is alive at the end of the game, a playthrough-truth (in the aforementioned example) is the player-character died before the ending of the game.

Tuen Dubbelman (2011) discusses the emergence of video games as a new form of narrative media with unique capabilities in their article "Playing the Hero: How Games Take the Concept of Storytelling from Representation to Presentation." Dubbelman explores the limits of a structuralist approach to understanding narrative, theorizing it as an analogical or literal depiction of real or fictitious events. Their argument: The approach doesn't apply to all games

and a more comprehensive approach is required for comprehension. To clarify the concept of narrative for video games with prior academic analysis, they propose two conceptualizations: presentological and representological. The former refers to story events occurring in the present; the latter describes a narrative in which past story events are communicated. A key difference stems from their relation to a specific narrative format. Regarding the broader notion of branching narrative, Graham A. Wilson, lecturer in computing at Moray College UHI, researches the concept of a branching narrative within software development fleshing out possible opportunities through the digital medium (Wilson, 2020). In their article “The Use of Using Digital Tools in Developing Branching Narrative,” the author seeks to increase the employment opportunities of creative writing students by researching and demonstrating how the concept of a branching narrative can effectively be developed through digital tools.

Exploring camera perspective and its significance within video games, Adam Charles Hart (2019) reflects on Alexander Galloway’s research on the subjective camera shot in “The Searching Camera: First-Person Shooters, Found-Footage Horror Films, and the Documentary Tradition.” Galloway establishes a clear distinction between the subjective and a point-of-view (POV) shot in their analysis. Combining the camera with a character’s eyes, the subjective differs from an abstract POV shot as the latter reveals an approximation of what a character sees (Willemsen, 1994). Subjective shots are positioned within the skull of a character and designed to mimic sight, complete with interruptions such as blinking and blurred vision. Utilizing a POV shot or first-person camera, Hart and Galloway discuss the specific type of game design called the first-person shooter (FPS). In an FPS game, player action and field of view are synergized. Hart (2019) argues, to keep the player on edge, a video game typically features FPS design. The player is unaware of what is outside of their field of view, forcing them to engage often with the

camera and monitor their surroundings. An FPS game seeks to create vulnerability within the player as their view of the world is from their character's perspective. The player projects themselves onto the character. The vision of the character becomes an extension of their own.

In "What's My Motivation? Video Games and Interpretative Performance," Grant Tavinor (2017) investigates the concept of player-character motive within video games relative to narrative and player interpretation. Tavinor seeks to understand the relationship between the imagination of a video game player and the decisions they make within a video game's narrative. As game design varies across video games, the author concludes only general rules can be derived for how the motivations of a player manifest. For instance, some games prioritize identities of their fictional characters within the narrative. The result evokes player interpretation in the third-person perspective as players make judgments based on how they perceive a narrative's in-game character. However, other games may feature characters with little to no distinctive qualities—prompting the player to interpret narrative through the first-person perspective. The player imbues the player-character with personality making much of the in-game player-character narrative decisions.

The author then introduces the game design variation where gameplay produces player motivation. Such games include *Uncharted: Drake's Fortune* which features levels where the player must kill mass amounts of non-playable characters (NPCs) to progress from one level to the next (Naughty Dog, 2007). Tavinor uses *Uncharted: Drake's Fortune* to introduce the concept of ludonarrative dissonance (Hocking, 2007), describing the problem of inconsistency between a game's narrative and gameplay in which *Uncharted: Drake's Fortune's* narrative features a charming, easygoing explorer killing exorbitant amounts of people. The application of this concept shouldn't be applied to *Uncharted: Drake's Fortune* as the protagonist only kills in

self-defense after first being attacked, unless the player engages first changing the fictional playthrough-truth.

In Tobi Smethurst's (2017) case study on the video game *Spec Ops: The Line* developed by Yager Development, "We put our hands on the trigger with him;" Smethurst analyzes both the video game's narrative and interactive elements (Yager Development, 2012). In addition to validating video games as both artform and a viable form of storytelling, Smethurst demonstrates how they evoke emotion and impact people. Unlike other artistic mediums, video games are a unique form of art as the player can be in control of player-character actions and impact narrative. Interactivity within *Spec Ops: The Line* reinforces its narrative. If made in an alternative medium such as film, *Spec Ops: The Line*'s core successes would be drastically ineffective, perhaps even absent. Smethurst's main goal is to demonstrate how the game's interactivity allows the player to embrace their in-game playable character even as it is revealed they have committed horrifying acts.

An identity crisis emerges as the player considers if they are the villain of the game's story. The author argues the game's design circumvents a common practice of prioritizing the victims' experiences to atrocities; the player controls the perpetrator of the narrative's events without knowing. The game is deceptive. Additionally, Smethurst attempts to prove how the player is equally guilty of the crimes of protagonist player-character Captain Walker. Their main point: the player continued playing. Instead of killing people within the video game, the player could have stopped playing to avoid pulling the virtual trigger. Referencing the works of Craig and Emily Bourne, Aden Evens, and Morgan Luck, Smethurst's allegations are invalid (Bourne, 2019; Evens, 2011; Luck, 2009). Video game actions generate fictional truths regarding actions of the player-character, not the player. Furthermore, in *Spec Ops: The Line*, a player does not

have complete freedom within the game as they are forced to adhere to the game's design and narrative.

The player does not share the blame of the player-character within the narrative of *Spec Ops: The Line*. Smethurst's outlook is too personal. Such a mindset is akin to concluding readers of a book about a fictional murder share responsibility of the crime due to their choice of reading material. With Smethurst's logic, reading the book gave life to the crime within it. While *Spec Ops: The Line* is interactive and reacts to player input unlike books, the player of a game is still unable to alter a predetermined narrative. The player might pull the trigger on the protagonist's gun, but they have no other options similar to how a book's narrative cannot be changed. Concluding a player beat *Spec Ops: The Line* due to a desire to participate in the actions of the protagonist is conjecture. Perhaps a player of the video game was appalled and resentful of committing the in-game actions of the protagonist, but continued not wanting to waste the money spent on buying the game. Perhaps they merely wanted to see the game through for the sake of finishing. Unknown story endings are unsatisfying.

Successful game design, aligning with Smethurst's mentality, exist if the player was capable of avoiding the horrific acts possible in the game without quitting. For instance, Smethurst uses the game's white-phosphorus scene to illustrate the player willingly partakes in a war crime. The scene in question features player-character Captain Walker pinned down by heavy fire. Previously, Captain Walker states his resentment toward using a weapon like white-phosphorous as he has seen how devastating it is. However, in this scene, the player is incapable of not using the white-phosphorus weapon. If the player attempts to run away or kill all shooting at them in self-defense with a gun (instead of white-phosphorus), the player quickly discovers they are unable.



Unlike the player-character's ammunition, the amount of non-playable assailants is unending. The only way to progress is to follow the narrative's lead and commit a war crime as it is revealed the weapon not only eliminates attackers but innocent people nearby (including a mother with her young child). While the scene is profound as a horrendous amount of tragedy occurs in a flash, this particular scene fails in accomplishing the game's mission. The involvement of restricted gameplay in player motivation nullifies much of the game's narrative-induced feelings of guilt as the player is shamed for player-character actions they had no choice but to participate in (the white-phosphorus example). The game's design mitigates moral turmoil as the player had no options—excluding quitting the game, wasting both money and time and not fully experiencing the entertainment product purchased.

The game's core concepts are reliant on player involvement as the game engages with the player, encouraging them to question their actions. Instances of success in the game designer's mission include scenarios such as the player choosing to commit a war crime on their own. For example, when the player stands in front of a crowd of citizens protesting the player's involvement in the affairs of their city. Fearing for their lives and mourning fallen citizens, the crowd killed one of the player-character's companions. The player is given the choice to kill all of them out of revenge for the player-character's companion, or spare them and move on. Leveraging aforementioned resources and building off instances of effective game design, the project *Alone* encapsulates narrative-defining moments into binary choices within a dynamic game experience. Thus, providing freedom of choice in player decision-making with consequences stimulating learning through psychological response. While the player of a game is not culpable for player-character action, *Alone* demonstrates feelings of responsibility within the player are possible through high-levels of choice.

## Methodology

The project *Alone* seeks to provide meaningful interactivity with narrative-defining possibility, leveraging the methodological approach psychoanalysis to accomplish the following goals: Identify and implement choices critical to narrative by embracing limitations inherent to video games; foster psychological responses achieving learning through emotional attachment to player-character action. The tools utilized to produce project: 3ds Max, Blender, Substance 3D Painter, Unreal Engine 5, and ZBrush. The gameplay mechanics of *Alone* are created through Unreal Engine's Blueprints Visual Scripting system with aspects of the project built through C++. Gameplay mechanics within *Alone* provide significant interactivity, namely player action affecting player-character emotion. To promote non-frivolous player behavior as player action has deep effects within the game, *Alone* features a realistic art style. Enhancing the connection between the player and player-character, their distinguishing features are concealed and distinctive qualities are incidental, allowing the player to be immersed. Innovation achieved by *Alone* within the game design discipline is as follows: Player action affects player-character emotions, gameplay, and narrative, creating a transformable game experience with educational value applicable to the non-virtual world.

Through the perspective of a young child, player action defines the game experience such as choosing whether to protect a small, defenseless robot NPC capable of comforting the player-character. The game environment is a surreal, dangerous, frozen world, paired with atmospheric sounds establishing a foreboding tone. The player must nurture the player-character's emotional state to avoid detection while eluding nightmarish danger. Heightening player-character connection to player, their vision and the game's third person camera (positioned behind player-character) are linked (comparable to a first-person camera). Matching realistic vision restrictions,

the camera is incapable of looking at the player-character's face similar to player-character sight. The camera also features realistic rotation constraints—the player-character will turn-in-place adjusting accordingly when looking too far to a given side. The camera's novel functionality subconsciously enforces the idea of synergy with player-character vision. Additionally, the camera allows player-character body language to non-verbally communicate current condition to the player.

Applying psychoanalysis to identify psychological ramifications of video games, no conclusive evidence exists of either the negative or positive impact on players (Ferguson & Kilburn, 2009). In the article "Players, Characters, and the Gamer's Dilemma," Craig Bourne and Emily Caddick Bourne (2019) explore the concept of committing murder and other ethically wrong acts within the confines of a video game. Building on Morgan Luck's "Gamer's Dilemma" (2009), they develop an approach ascertaining if similarities exist between committing ethically wrong acts outside of video games. The article provides insight into the ethical nature of video games and their psychological ramifications. The main argument is: Ethically questionable acts committed within video games must be understood within the fiction-making resources accessible to video game players.

Morgan Luck concludes no real harm could occur from video game play as all game actions are virtual. Supporting Luck's conclusion, in the article "Roles Games can Play," game designer and academic Prayas Abhinav (2021) draws on twelve years of experience with the video game medium illustrating its impact on players. While discussing the principles that make playful process-driven video games, Abhinav addresses how real-life situations can be encapsulated within them, allowing players to be educated with reduced stakes. For instance, within video games designed around warfare, the player gains an appreciation for what it means

to be a soldier of war without physical risk. The player can be virtually exposed to the dangers of combat and moral ambiguity of a warzone in a civilian area without involvement of real human life. Craig and Emily Bourne agree with Luck, concluding player interactions within a game do not generate fictional truths of player actions. Furthermore, games may feature acts such as virtual murder not to corrupt players but, rather, encourage reflection on equivalent real-world acts.

In “The Logic of Digital Gaming,” Aden Evens (2011) analyzes the appearance and behavior of video games illustrating effects on players. Specifically, they demonstrate the idea video games purposefully heighten contrast between the virtual and physical world. As video games are programmed by game designers, all elements of a video game’s virtual world require explicit human involvement to exist. Due to this convention, real-world results are not guaranteed when a player applies real-world logic. In-game object behaviors and player actions are possible because a game designer put them in the game. Utilizing object-oriented programming (OOP) in this endeavor, game designers link appearance and behavior around a common set of data expediting game development.

Due to the nature of video game design, players must discover the possibilities of a video game’s world. Through exposure to a game’s algorithmic logic, the player shapes their method of play accordingly. Evens expands on this notion but explicitly states a video game’s design is conceptualized and deliberate. A challenge with designing a video game is constructing a world where appearances and behaviors are intuitive enough to avoid player frustration. However, intuitive game mechanics do not explicitly translate to direct representations of reality—the amount of choice within a game is constricted by design. Game designers work to construct immersive worlds with elements authentic to the holistic experience of a video game, but players

will always be restricted by the choices game designers allow, hindering the connection between the player and player-character. According to Evens, a reason game designers include mass amounts of violence in their games is to emphasize distinction between the game world and reality. Games often contain their own version of physics authentic to their virtual world's mechanics, conveying to players not to approach the game world with preconceived notions of what's possible.

Deviating from the game design tenet of prioritizing a disconnection from the non-virtual world, the framework of *Alone* aspires to invite the player to employ morals and logic used in reality. Game mechanics in *Alone* instill feelings of responsibility within the player for player-character action. Designed to play and look realistic, the mechanics of *Alone* motivate the player to make decisions in a manner similar to within the non-virtual world. While the virtual world of *Alone* contains fictional elements such as monsters and a robot, *Alone* promotes principals prevalent within the non-virtual world through universal scenarios such as caring for the vulnerable. *Alone* explores the concept of accountability: If the player abandons the innocent and defenseless robot, the game experience shifts, subconsciously deepening the connection between player and player-character enforcing causation.

## Production

Through applying the methodology psychoanalysis while leveraging relevant academic resources, *Alone* exhibits game design strategies which provide significant control of the player-character and learning opportunities within an immersive experience. With the connection between the player and player-character placed at the forefront of the development of *Alone*, even subtle player choices can alter gameplay mechanics shifting the game experience. For example, the player-character emotional state mechanic (encompassing player-character fear and happiness) reacts to player action and influences player-character functionality. Player-character fear increases when the enemy is visible or nearby, eventually resulting in fast panicked player-character breathing animation and sounds. With the potential of alerting the dangerous blind monster actively roaming inside *Alone*, high player-character fear has dangerous consequences. Opposite to the player-character's fear system, happiness produced from player-character humming or contact (physical and visual) with the robot is capable of decreasing fear.

The player-character's breathing functions as a game mechanic within *Alone* in addition to contributing to soundscape. The volume of player-character breathing impacts their detectability and is reflective of player action. When the player-character exerts themselves either by sprinting for an extended duration or jumping repeatedly, stamina is drained and breathing turns frantic as they become incapable of humming until stamina and breath recover. Another factor capable of elevating player-character breathing is the player-character becoming afraid. As the camera reflects player-character vision, the player-character's fear rises when elements intended to evoke fear within the player are visible, similar to how witnessing frightening scenarios in the non-virtual world are liable to produce fear. Plausible player

reactions generated by *Alone* are emulated within the player-character and affect the game experience.

Another aspect of the soundscape of *Alone* is dynamically changing footstep noise immersing the player into the virtual world. Sound effects and their respective volume is determined by character movement and surroundings, with level of pitch randomized between a specific range for variation. Footstep sounds are triggered when a character's feet touch the ground while moving, and a single footstep sound is produced to accompany player-character movement if brief player input occurs. Upright movement produces sounds at a normal volume, jumping and sprinting produce the loudest sounds, and crouched movement produces the quietest sounds. With a monster enemy drawn by noise, the player must be conscientious of player-character movement.

Additionally, player behavior impacts the robot's relationship with the player-character such as whether they choose to hold the robot's hand. When the robot views the player-character as their friend, their primary interest is following them. As a result, a high friendship level allows the player to explore temporarily without holding the robot's hand to prevent them from getting into trouble. In contrast, a low-friendship level means the robot wanders if the player-character isn't holding their hand as they're curious about the world around them. However, the robot only explores a limited distance away from the player-character in an effort to prevent caring for the robot becoming a burden. If the friendship level is low but the player decides to travel with the robot (and if the robot isn't near or destroyed), the player will be able to find them fairly easily.

Expanding on the holding hand mechanic, when the player-character is holding the robot's hand, the player can signal to the robot to switch sides and hold the player-character's other hand. Further, the robot notices whether the player waits for them to transition to the

player-character's other side. If the robot is in the process of switching to hold the player-character's other hand yet the player is impatient and begins moving the player-character, their friendship with the player-character will be negatively affected. To suggest the robot is capable of thought, they will not switch to hold the player-character's other hand if it's obstructed. When the player initiates holding hands with the robot, the robot will continue holding the player-character's hand until either the player stops holding their hand or a scenario occurs disconnecting them from each other (i.e. the player-character walking against a wall with no space for the robot to continue holding the now blocked player-character's hand). If one of these scenarios occurs and the robot has a high enough friendship with the player-character, the robot will attempt resuming holding hands with the player-character's same hand or the opposite hand if it's obstructed.

While interaction with the robot NPC is optional, traveling together is a powerful strategy to combat player-character fear. Close proximity to the robot increases player-character happiness, assisting management of player-character fear. Although the player is capable of increasing player-character happiness independent of the robot through the player-character humming, this method produces noise and is risky. Despite moving with the robot also increasing risk of detection due to robot footsteps adding to sound created by player-character footsteps, this option is superior as player-character fear can decrease silently when stationary. Another aspect regarding guiding and protecting the robot: If the player either ignores the robot or the robot is destroyed, the ending of the game will reflect their actions, educating the player about responsibility.

Elevating the interactive game experience further, *Alone* contains an intricately designed responsive movement system paired with immersive animation. Equipped with 8-directional



movement upright or crouched, the player is capable of navigating the virtual environment of *Alone* with a high degree of control. Creating an additional layer of depth to movement, multiple jump states are utilized each with unique animation. Whether executing a stationary jump, propelling forward in a moving jump, or in a free fall state, player-character animation smoothly transitions based on player action and player-character interaction with surroundings. The player-character can also jump out of crouching to achieve a jump higher-than-normal as they wound up and generated energy. Adding to player-character platforming capability, the ability increases level verticality. The player is incentivized to master movement as hidden locations exist throughout the game accessible with skilled platforming. Delving deeper into jumping abilities, *Alone* has a skip mechanic triggered from adeptly timed moving jumps enhancing interactivity while suggesting player-character youthfulness.

## Conclusion

Mechanics implemented within *Alone* demonstrate a malleable game experience meaningfully shaped by player choice, providing immersivity with lessons applicable to the non-virtual world. *Alone* places feelings of responsibility onto the player through changeable narrative and gameplay mechanics, elevating the connection between the player and player-character while demonstrating video game viability as a tool for education. Each action conducted by the player has an effect, including the subject of their vision through the game's camera system, demonstrated with the player-character's unique emotional state mechanic. By establishing a meaningful connection between player choice and the events within a game, effective emotional and psychological responses are produced inducing learning.

While scale of narrative and gameplay features within *Alone* are limited by the project's timeline, depth was prioritized to accomplish identified objectives: Offer significant player choice with narrative defining implications, and generate psychological reactions to educate the player through emotional attachment to player-character action. Employing both implicit and explicit narrative elements within *Alone*, the player is capable of gaining insight into events regarding the world in which the player-character resides. Although not required to complete *Alone* or experience player instigated narrative consequences, curiosity is rewarded with context as player exploration further illuminates plot background information. Concerning gameplay, mechanics within *Alone* offer various levels of complexity. Reaching an ending without mastering gameplay mechanics such as managing player-character emotion or movement is possible; however, experimentation and practice have potential to enrich the player's experience. *Alone* offers a personalized and thrilling escapade with narrative and gameplay intricacy contingent on player-choice.

Each aspect of *Alone* works to strengthen the connection between the player and player-character, immersing them in the game. Mitigating disconnection between the player and game experience, diegetic (existing within the game world) user interface (UI) elements are incorporated to communicate important game information. By altering breathing speed and sound to convey the player-character's emotional state, the player can remain engrossed in gameplay while understanding current player condition. The player feels accountable for choices as player action is impactful. When events occur designed to evoke emotional and psychological responses in the player such as feelings of remorse, their genesis is rooted in player action. For instance, whether the robot considers the player-character a friend or if they're destroyed, the player is culpable. They dictate the outcome of such events.

Functioning as a tool capable of psychologically impacting and educating the player, *Alone* demonstrates educational potential possible through video game interactivity. Player reactions generated through gameplay are directly proportional to consequences from player action. Reducing or eliminating a player's ability to shape a game's experience diminishes player emotional attachment to game events. While emotional responses are possible regardless of meaningful player choice, feelings of liability within the player are eliminated without them. Video games have the unique capacity to immerse players into interactive virtual worlds, offering experiences and knowledge otherwise unknown.

## Bibliography

- Abhinav, P. (2021). Roles games can play. *Marg: A Magazine of the Arts*, 72(4), 46.  
<https://web.s.ebscohost.com/ehost/detail/detail?vid=7&sid=217abf8e-dd76-41d1-9c9d-b65415e0cb4f%40redis&bdata=JkF1dGhUeXBIPXNzbyZzaXRIPWVob3N0LWxpdmU%3d#AN=151514944&db=aft>
- Art history survey: A Round-Table Discussion. (2005). *Art Journal*, 64(2), 33–51
- Bourne, C., & Caddick Bourne, E. (2019). Players, characters, and the gamer's dilemma. *Journal of Aesthetics & Art Criticism*, 77(2), 133–143. <https://doi.org/10.1111/jaac.12634>
- Brooker, K. (2013). Making the best quest list. *Applied Arts Magazine*, 28(2), 024–030
- Cason, N. F. (1998). Interactive multimedia: an alternative context for studying works of art. *Studies in Art Education*, 39(4), 336–349. <https://doi.org/10.2307/1320238>
- Cox, J. M. (2014). Role-playing games in arts, research and education. *International Journal of Education through Art*, 10(3), 381–395. [https://doi.org/10.1386/eta.10.3.381\\_1](https://doi.org/10.1386/eta.10.3.381_1)
- Dubbelman, T. (2011). Playing the hero: How games take the concept of storytelling from representation to presentation. *Journal of Media Practice*, 12(2), 157–172.  
[https://doi.org/10.1386/jmpr.12.2.157\\_1](https://doi.org/10.1386/jmpr.12.2.157_1)
- Evens, A. (2011). The logic of digital gaming. *Mechademia*, 6, 260–269.  
<https://doi.org/10.1353/mec.2011.0016>
- Ferguson, C. J., and J. Kilburn. (2009). The public health risks of media violence: A meta-analytic review. *The Journal of Pediatrics*, 154 (5): 759–763.  
<https://doi.org/10.1016/j.jpeds.2008.11.033>

Freedman, K. (1997). Visual art / virtual art: Teaching technology for meaning. *Art Education*, 50(4), 6-12. Retrieved from [www.jstor.org.ezproxy.library.ubc.ca/stable/3193647](http://www.jstor.org.ezproxy.library.ubc.ca/stable/3193647)

Games research lab. (2013). *Game Research Lab @ Teachers College: EGGPLANT Home*. TC Columbia.

[http://www.tc.columbia.edu/centers/gamesresearchlab/index.asp?Id=Home&Info=EGGP\\_LANTHome](http://www.tc.columbia.edu/centers/gamesresearchlab/index.asp?Id=Home&Info=EGGP_LANTHome)

Hart, A. C. (2019). The searching camera: First-person shooters, found-footage horror films, and the documentary tradition. *JCMS: Journal of Cinema & Media Studies*, 58(4), 73–91. 10.1353/cj.2019.0058

Hocking, Clint. (2007). Ludonarrative dissonance in *BioShock*. *Click Nothing Blog*.

[http://www.clicknothing.typepad.com/click\\_nothing/2007/10/ludonarrative-d.html](http://www.clicknothing.typepad.com/click_nothing/2007/10/ludonarrative-d.html)

Kinkley, J. (2009). Art thief: An educational computer game model for art historical

instruction. *Leonardo*, 42(2), 110–137. <https://doi.org/10.1162/leon.2009.42.2.133>

Luck, M. (2009). The gamer's dilemma: An analysis of the arguments for the moral distinction

between virtual murder and Virtual paedophilia. *Ethics and Information Technology*,

11(1), 31–36. <https://doi.org/10.1007/s10676-008-9168-4>

Martyniuk, S. V. (2018). Game on! Teaching video game studies in the arts classroom. *Art*

*Education*, 71(3), 14–19. <https://doi.org/10.1080/00043125.2018.1436325>

Naughty Dog. (2007). *Uncharted: Drake's Fortune* (Playstation 3 version) [Video game].

Sony Computer Entertainment

- Patton, R. (2015). Games as an artistic medium: Investigating complexity thinking in game based art pedagogy. *Studies in Art Education*, 66(1), 35-50.  
[www.tandfonline.com.ezproxy.library.ubc.ca/doi/abs/10.1080/00393541.2013.11518915](http://www.tandfonline.com.ezproxy.library.ubc.ca/doi/abs/10.1080/00393541.2013.11518915)
- Smethurst, T. (2017). “We put our hands on the trigger with him”: Guilt and perpetration in Spec Ops: The Line. *Criticism*, 59(2), 201–221. <https://doi.org/10.13110/criticism.59.2.0201>
- Suvajdzic, M. (2016). Gamifying reality: How should history intersect with fantasy. *Technoetic Arts: A Journal of Speculative Research*, 14(3), 197–204.  
[https://doi.org/10.1386/tear.14.3.197\\_1](https://doi.org/10.1386/tear.14.3.197_1)
- Tavinor, G. (2017). What’s my motivation? Video games and interpretative performance. *Journal of Aesthetics & Art Criticism*, 75(1), 23–33.  
<https://doi.org/10.1111/jaac.12334>
- Walton, Kendall L. (1990). *Mimesis as make-believe: On the foundations of the representational arts*. Harvard University Press
- Willemsen, P. (1994). *Looks and frictions*. Indiana University Press
- Willis, M. D. (2019). Choose your own adventure: Examining the fictional content of video games as interactive fictions. *Journal of Aesthetics & Art Criticism*, 77(1), 43–53.  
<https://doi.org/10.1111/jaac.12605>
- Willis, M. (2020). The importance of the playthrough: A response to Ricksand. *Journal of Aesthetics & Art Criticism*, 78(1), 105–108. <https://doi.org/10.1111/jaac.12691>
- Wilson, G. A. (2020). The use of using digital tools in developing branching narrative. *Book 2.0*, 10(1), 117–139. [https://doi.org/10.1386/btwo\\_00023\\_1](https://doi.org/10.1386/btwo_00023_1)

Yager Development. (2012). *Spec Ops: The Line* (Microsoft Windows version) [Video game].

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