

DEVELOPING A DIGITAL GAME TO FOSTER MORALITY AND EMPATHY IN ADULT
LEARNING CONTEXTS: FROM THEORY TO DESIGN AND PRACTICE

by

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(Under the Direction of Lloyd P. Rieber)

ABSTRACT

Moral decision-making models in game environments have been increasingly reported in research. These models, however, focus on identifying affordances and goals of games and educational interventions rather than tracing the process of moral decision-making in game worlds. This dissertation study addresses this gap in the literature by presenting and discussing the design, development, and implementation of two iterations of a game-based learning tool to identify the process of moral reasoning of potential and current government workers in controlled and continuing education settings. Awareness of moral decision-making processes was hypothesized to assist learners in recognizing their biases and decision patterns, which may lead to more efficient decisions in the real workplace. This dissertation is configured using the multiple article format and consists of three studies. Chapter 2 presents a review of the literature and design case for the first iteration of the tool. Chapter 3 describes an empirical investigation that identifies the process of in-game moral decision-making of future government workers with the first iteration of the game. In Chapter 4, I present a research study that investigates how learners make moral decisions with a subsequent iteration of the tool in an instructional setting.

INDEX WORDS: Game-based learning; Moral awareness; Serious games; Decision-making;

Moral decision-making; Moral game design.

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DEDICATION

To my mom, who taught me to love and dream regardless of circumstances

Para minha mãe, que me ensinou a amar e a sonhar independente das circunstâncias

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CHAPTER 1

INTRODUCTION

Background

Although our world is connected by technological devices, people, surprisingly, are growing apart and decreasing the frequency and meaningfulness of conversations about socially relevant topics (Turkle, 2016). Research with American college students over decades has demonstrated that levels of empathy and perspective-taking have decreased in the past twenty-five years, coinciding with the rise of online social networks (Konrath, O'Brien, & Hsing, 2011). These spaces and technologies connect people who may be far away, but the increased interaction with digital devices has led us to grow apart and feel increased loneliness (Turkle, 2011). As a result, the current generation may be less able to take the perspective of others and empathize. This, in turn, can impair important skills for society and the workplace, such as decision-making (Frith & Singer, 2008). Some technological tools, however, such as narrative-focused digital games, can be used for educational purposes to fulfill the need for such skills, fostering meaningful conversations (Turkle, 2016).

Morality and empathy in narrative games as designed experiences have been themes of constant discussion in the gaming literature. Considering the elusive and evolving nature of games, as well as the social and ideological perspectives of them, the study of morality and relatedness in virtual environments has evolved along with the medium and society. Researchers argue that morality and moral assessment systems have been present in video games since the release of *Ultima IV* in 1985 (Heron & Belford, 2014; Sicart, 2013). One of the primary

objectives of the game was to carry out good deeds and demonstrate virtues (Heron & Belford, 2014). The first of its kind, the morality system in *Ultima IV* was also simplistic: decisions were presented as extreme moral choices where the *good* and *bad* behavior and could be easily recognized. Such predictable and clear-cut game features allowed players to strategize and make decisions that could benefit them in terms of quality of game play and narrative progression (Sicart, 2013). However, even though morals in *Ultima IV* are rudimentary, the game succeeded in demonstrating to players how their actions are contextualized and the possible consequences of their behaviors in the game world (Zagal, 2009).

Although *Ultima IV* is the earliest instance of morality in games, popular games that came after it failed to address how moral issues are approached in virtual worlds. The subject of ethics in interactive media came under media scrutiny by the beginning of the century due to the rising popularity of violent games that presented realistic graphics and historically and culturally situated virtual environments, such as the *Grand Theft Auto (GTA)* series. In *GTA*, players are often encouraged to adopt racial and sexual discriminatory stances, as well as violent and illegal behavior, in order to advance the game narrative (Gotterbarn, 2010). Sicart (2005) argues that, in criticizing such games based solely on the instrumental affordances allowed by the design, the media dismisses the importance of player interaction to create an ethical gameplay experience. It could be argued that Sicart (2005) expects players to naturally exercise reflection on their actions during game play. If this is so, then this would decrease designers' responsibility in promoting reflection regarding unethical actions and generate the assumption that the majority, if not all, of players view their in-game acts from a critical standpoint. As a result of designers' neglect of reflection during game play, the proliferation of games that portray violent imagery (with or

without moral themes) has caused a tendency to blame violent games for real-life events (Markey & Ferguson, 2017). There is presently no sufficient evidence, however, that supports this conjecture.

Even though games that present the “right versus wrong” binary (Joeckel, Bowman, & Dogruel, 2012) are still common (Barnett & Sharp, 2015), the most recent decade has observed a shift towards the consideration of complex issues of morality in game design. Recent digital games have, for instance, presented ethical dilemmas (Consalvo, Busch, & Jong, 2019; Schrier, 2019) that position the player in situations with complex and nuanced decisions with unpredictable (and sometimes undesirable) outcomes. In focusing on the complexity of moral issues, these “ethically notable” (Zagal, 2009, p. 7) video games facilitate players’ reflection on what their choices mean and how they relate to their real selves. Instead of presenting distinct strategic choices, some ethically notable games draw on players’ emotions and values to progress in ways that may be qualitatively similar. In other words, the game does not become easier or harder, but simply different, based on the choices made. In this case, reflection can also come naturally if incorporated as an inherent part of the virtual narrative (Heron & Belford, 2014). That said, it is important to emphasize that the focus in this study is placed on games that have narrative as a central aspect.

Narrative-focused games such as roleplaying games and adventure puzzle-solving games are most effective in situating potential decisions in a context where one’s morality plays a role in how the virtual environment is shaped. The focus on a game’s story and its characters to create morally-laden decision-making possibilities is discussed in recent empirical studies and theoretical models that relate games to ethics and morality (Katsarov, Christen, Mauerhofer,

Schmocker, & Tanner, 2017; Ryan, Staines, & Formosa, 2017; Schrier, 2015, 2019; Sicart, 2013). Narrative games create possibilities for players to grow morally and develop an identity in the virtual environment and relate to non-playable characters (NPCs) that populate the game world (Schrier, 2019), taking these relationships into account when making decisions. These games approach a wide variety of ethical and empathic issues, such as the value of one's life, as in the case of *The Walking Dead* (Ryan et al., 2017) and *This War of Mine* (de Smale, Kors, & Sandoval, 2019), as well as relatedness and prioritization, in the case of *Papers, Please* (Heron & Belford, 2014). Consequences of moral decisions are also portrayed, impacting players' emotions and behavior and potentially increasing awareness of their role in following choices. That said, games that approach morality effectively succeed in giving players just-in-time feedback regarding the impact of their decisions.

Serious Games and Instructional Practices for Moral Decision-Making Awareness

Although previous research in understanding morality in game contexts has focused primarily on commercial games (e.g. Barnett & Sharp, 2015; Consalvo, Busch, & Jong, 2016; Grizzard, Tamborini, Lewis, Wang, & Prabhu, 2014; Katsarov, Christen, Mauerhofer, Schmocker, & Tanner, 2017; Schrier, 2015), a serious game was developed for this dissertation research. Serious games are, simply put, educational games that are developed to be used in instructional contexts to address specific content and/or content areas (Squire, 2007). In a review of empirical research on serious games, Young et al. (2012) found limited evidence on the effectiveness of these games when used in experimental conditions and/or in classroom contexts. However, Young et al.'s (2012) results suggest that studies often fail due to the perception of

games as self-contained learning materials. According to Young et al. (2012), teachers should facilitate the play process and promote reflection.

Following game play, a discussion among players can benefit from instructor mediation. A mediator can allow learners to reflect upon their decisions and practices in order to achieve certain objectives (Moon, 2004). Reflection in and of itself should not be a goal of instruction, but rather assist in the attainment of a specific goal. The game developed in this study, for instance, addresses reflective practices in order to aid learners in identifying their decision-making processes, as well as their unconscious biases. The instructor can address questions that cover participants' reasoning throughout the game play experience during the discussion phase, as well as ask students about the nature of such decisions. Identifying differences between reasoning can motivate students to reflect on their choices and potentially make different decisions in future moral choices. All in all, this approach is centered on the student in a context where the teacher acts as a facilitator (Hafner & Miller, 2011). Each student would be expected to achieve a different level of moral and empathic awareness based on their individual profiles and understanding of games. Instructors should foster discussion with general questions that relate to the game.

Description and Significance of the Study

This study expands on previous research that aims to find ways to integrate digital games into instructional environments to increase self-awareness, empathy, and morality (Schrier, 2017; Schrier & Gibson, 2010). Researchers have not, to date, explored the design of digital games to address particular moral situations that learners may face in their personal and professional lives. Previous empirical (Schrier, 2017; Zheng et al., 2012) and theoretical (Katsarov et al., 2017)

scholarship have focused on commercial off-the-shelf games (Kronenberg, 2012) that offer simulated situations that bear no resemblance to learners' cultures. I hypothesized that the design of a digital game that presents situations that students may face in their own lives can lead to better learning, yielding more meaningful moral and empathic gains and increasing transferability of concepts and moral awareness to real-life practices.

Within this larger context, this dissertation details the development process and two iterations of a design-based research (Amiel & Reeves, 2008; Barab & Squire, 2004) study that investigates the moral decision-making processes of prospective and current government workers in a serious game that presents a situation of nepotism in a government workplace. The rationale for creating a game for this study considered that the intervention would take place in online continuing education contexts with time constraints. Designing a serious game for the specific purposes of the research allowed me to address moral issues in government contexts in a straightforward manner, with minimal possibilities to divert players' attention to other components of the game environment. The focus on instruction and reflection without distracting factors can lead to more effective learning outcomes (Adams, Mayer, Koenig, & Wainess, 2012).

A methodological gap is addressed in this study. The vast majority of game-based learning literature has, thus far, analyzed educational games in terms of their effectiveness as learning tools through teachers or players' accounts, summative feedback, and statistical analyses (e.g. Bachen, Hernández-Ramos, & Raphael, 2012; Gerber & Price, 2013; Greitemeyer & Mügge, 2014; Greitemeyer, Osswald, & Brauer, 2010; Raphael, Bachen, & Hernández-Ramos, 2012). The added unit of analysis here is the game play process (Schmierbach & Limperos, 2013). While I acknowledge the importance of assessing the success of game-based

instructional interventions based on learning outcomes, the same level of attention should be dedicated to understanding the process of knowledge acquisition within virtual worlds: How do learners react to game challenges? How do they make decisions within a game environment? How long do they take to do so? What emotions are expressed during game play? Attending to these issues can contribute to instructional practices with games in education, as well as suggest and/or establish educational game design features that can be specifically conducive (or not) to learning.

Dissertation Design Rationale and Structure

This investigation follows theoretical underpinnings of design-based research (Amiel & Reeves, 2008; Barab & Squire, 2004). Design-based research theorists describe it as an approach to inquiry that aims at investigating strategies to improve educational practice, considering all the complexities and nuances of instructional contexts (Amiel & Reeves, 2008). Rather than developing short-term interventions to validate theoretical claims, researchers that adopt design-based research techniques work with practitioners throughout a considerable period of time, devising several iterations that aim at achieving a pedagogical goal in the immediate context. Design-based researchers are open to using qualitative and quantitative data collection methods, depending on what data are best for understanding the educational setting and intended goals (e.g. Gordon & Baldwin-Philippi, 2014; Jong, Dong, & Luk, 2017; Magnussen & Sørensen, 2010). That said, a design-based research approach is appropriate for the present study due to its contextual focus and suitability for capturing the complexity of game-based learning processes from different perspectives.

Due to the nature of this study, qualitative inquiry is prioritized to achieve a high level of description and analysis of participants' actions in the game and instructional contexts (Denzin & Lincoln, 2005). Qualitative research methods help investigators to reach an *understanding* of complex situations grounded in real-world contexts (Patton, 2014). Qualitative research methods embrace the complexity of the environment and the subjectivities that participants bring to it. Thus, qualitative inquiry generates data that can explain phenomena in detail, or, in Denzin and Lincoln's words (2005), "make the world visible" (p. 3). This intended outcome aligns with the intended objectives of the present study. Although assessing effectiveness of the tool is part of the research design, describing how learners interact with the game-based environment and how the experience can be improved is the primary focus. Thus, a qualitative perspective is of particular value in this process.

Following these theories and principles, this dissertation is organized as follows. Chapter Two presents the conceptual and theoretical reasoning for the development of the first iteration of the serious game created for this research. The educational possibilities and limitations of the initial design of the game environment are discussed based on a small-scale field test of the game with prospective government workers. The first iteration, presented in Chapter Three, was carried out in a controlled setting to identify preliminary conclusions regarding the process of moral decision-making using the game-based tool designed with a group of three prospective government workers. Chapter Three focuses on these participants' moral decision-making stances and processes identified during game play as well as the post-game focus group, taking into account theorizations of morality as a process (Rest, 1982) composed of different areas of moral expertise (Narvaez & Lapsley, 2005). A second iteration, presented in Chapter Four,

investigates the collective moral decision-making processes of prospective and current government workers using a further developed iteration of the serious game. Due to the iterative nature of this study, this dissertation is presented in the manuscript style structure, detailed in table 1.1 below.

Table 1.1

Manuscripts written and proposed for the dissertation study

Manuscript	Purpose
Chapter 2: Manuscript 1 Raising future government workers' moral decision-making awareness with game-based learning: Matters of lenses and constraints	Conceptualize the benefits of a game-based intervention for awareness of moral decision-making practices; Investigate possibilities and limitations of the tool designed for the intervention considering participants' accounts and experience.
Chapter 3: Manuscript 2 The process of moral decision-making in a game-based narrative scenario through the experience of future government workers	Investigate participants' moral decision-making processes within a game-based learning tool on Internal Controls in Government; Conceptualize instructional strategies with the game-based learning tool through analysis of participants' experiences.
Chapter 4: Manuscript 3 "There's no winning, just decision-making": prospective and current government workers' identity and morality in serious game play	Investigate how prospective and current government workers make collective decisions in a game-based tool simulating an unethical scenario in a government setting; Generate a humble theory (Cobb et al., 2003) regarding the enactment of player identities in prospective and current government workers' serious game play

Researcher Subjectivities and Assumptions

Peshkin (1998) highlights the importance of recognizing the possible impact of one's way of seeing and interpreting the role in the research process. This awareness can help researchers to monitor the influence of their personal perspectives on data collection, analysis, and reporting. Thus, in this section, I discuss aspects of my identity that have led to this research topic and acknowledge my personal stance towards the subject.

I am a Caucasian, Brazilian male whose experiences with video games have been predominantly positive. From a young age, I played digital games daily, demonstrating preference for those that present compelling narratives and characters that I could relate to emotionally. I did not, however, acknowledge how much I had learned with video games until I first started college.

Throughout my late years as an undergraduate in Brazil and as a graduate student in the United States, I have investigated the connection between games and learning in its various forms. These teaching and research experiences have been overwhelmingly positive. It is necessary to recognize, however, that my belief about the effectiveness of games in education is largely due to my involvement with this media in most of my life. Keeping this in mind allows me to understand that I may encounter, in my studies, participants whose experience and stance towards games differ from mine in significant ways.

Varying levels of contact with games can lead to results that are not necessarily positive in the present study. The involvement that I have had with games has demonstrated that they can be useful tools for fostering morality and empathy; however, different levels of familiarity with digital game genres and mechanics may impact game-based interventions for such educational

purpose. Such awareness allows me to think of strategies to improve the effectiveness of the tool and accommodate learners of distinct preferences and profiles.

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CHAPTER 2

RAISING FUTURE GOVERNMENT WORKERS' MORAL DECISION-MAKING
AWARENESS WITH GAME-BASED LEARNING: POSSIBILITIES AND CONSTRAINTS¹

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ABSTRACT

This article describes the development and testing of a digital narrative game aimed at raising awareness of prospective government workers' moral decision-making processes (Rest, 1982). This game was created following design conjectures (Sandoval, 2014) derived from relevant literature on morality and games (e.g., Schrier, 2015; Sicart, 2013). Salient features of moral games identified in the literature included the role of engaging narratives and desired player actions and emotions. The design process included context observation of a governmental training environment, as well as development of a game narrative and mechanics that integrated the design conjectures. Testing of the game indicates the possibility of using this artifact for adding emotional variables to governmental ethics training materials. Constraints are also reported by participants, such as the limited options for action in the game. These results contribute to the understanding of how learners can benefit from moral games from an awareness standpoint and offer suggestions for further development of the tool.

Introduction

Video games often offer rich worlds where players can manipulate the narrative by making decisions on how to act on the simulated environment (Gee, 2005, 2011). In many cases, these decisions are moral in nature (Sicart, 2013; Zagal, 2009); players act according to their emotional connection to characters, personal values, and desired in-game outcomes. Digital games, thus, provide a valuable opportunity for classroom instructors to identify learners' moral decision-making processes and help students to become aware of their moral biases. The use of such tools in educational interventions can prepare learners for deciding on moral courses of action when faced with similar situations in real environments.

Recent research has proposed design characteristics of games that contain moral features and embed decisions in complex nuanced settings (Schrier, 2015, 2019; Staines, Formosa, & Ryan, 2019). The design of moral games for entertainment purposes has also been explored (de Smale et al., 2019). Drawing on such empirical and theoretical sources, this article proposes a conceptual framework, with resulting design conjectures (Sandoval, 2014), to develop serious games (Squire, 2007) that can foster moral decision-making awareness. Furthermore, these design conjectures are evaluated in practice through the design of a serious game simulating a governmental setting and testing with prospective government workers. This movement from theory to practice suggests possibilities and constraints for the use of games focused on morality in instructional contexts.

This article is organized as follows: First, a review of the literature is presented, conceptualizing morality as a process, introducing theories of play, presenting a review of game-based learning literature and, more specifically, game-related studies that investigate the

relationship between games and morality. This review is followed by design conjectures and a description of the game development process and the resulting artifact. Lastly, a discussion centered on the game testing session and its implications for further development, overall design theorizations, and instruction is presented.

Review of the Literature

The Process of Morality

Morality can be understood within the umbrella term “soft skills” (Schulz, 2008). According to Schulz (2008), soft skills can be considered personal qualities and interpersonal skills that are crucial for the modern workplace (Kirsch, 2009); often context-bound, these characteristics can be developed and/or improved taking an individual’s self-awareness as the starting point. Although their importance is recognized in society, large scale achievement tests often neglect soft skills (Heckman & Kautz, 2012). Considering that possessing such skills can be a predictor of professional success, it is necessary to address them in instruction.

Philosophers and empiricists have defined and categorized morality in multiple ways. I adopt, in this study, Rest's (1982) theorizations, in which the author describes morality as a process composed of four components: (i) interpretation of situations; (ii) formulation of a moral course of action; (iii) making decision on the action itself; and (iv), execution and implementation of decision. This process is permeated by one’s perception of characteristics of a particular environment and its actors, as well as one’s emotional reactions throughout. Naturally, within moral decision-making, empathy plays a central role. Empathy can be defined as the emotion caused by our “understanding of the other’s emotional and motivational states” (Frith & Singer, 2008, p. 3877). Affective connections, perception of feelings based on prior experiences,

and moral perspectives influence the manner in which empathy is experienced (Frith & Singer, 2008).

Furthermore, theories that have expanded on Rest's (1982) process frame, for instance, skills that relate to different aspects of moral decision-making (Narvaez & Lapsley, 2005). According to Narvaez & Lapsley (2005), morality can be understood as a series of processes: sensitivity, judgment, motivation, and action. These processes comprise "a set of social, personal, and citizenship skills" (p. 155) that are inherent to the individual and directly influence moral decisions. Examples within the *sensitivity* process include perspective-taking, response to diversity, and controlling social bias. *Judgment* entails comprehension of ethical issues, general and ethical reasoning considering codes and criteria, and understanding potential consequences. Helping others cooperate and developing integrity and ethical identity are part of the *Motivation* process. Finally, *Action* involves taking initiative, asserting respectfully, and cultivating courage. Pedagogical interventions can foster expertise in such moral decision-making processes (Narvaez & Lapsley, 2005). The considerations raised by Narvaez & Lapsley (2005) provide valuable guidelines to observe specific aspects of the game play process that are attended to (or not) by participants in this study.

This approach to identifying and analyzing moral decisions has been applied to game studies. Theoretical considerations by Ryan, Staines, and Formosa (2017) problematize video games in which morality is objectively measured and can lead to "ludic rewards" (p. 151) and definitive positive or negative outcomes, which can reveal the designers' moral inclinations. In the place of metrics, Ryan, Staines, and Formosa (2017) argue that player's actions should impact the world considering reflections on the relationship between in-game and similar real-

life events. Non-playable characters can also provide contextualized evaluation of players' decisions through, for instance, comments on characters' behaviors and their impact on the game's story. These arguments provide an understanding of how morality can be better identified and assessed in game environments and suggest design components for the game created for this study.

To better comprehend how morality and empathy relate to video games, as well as the educational value of these processes in game environments, it is necessary to discuss the theoretical foundations of play and its core components (Caillois, 2001; Salen & Zimmerman, 2004). These theorizations are discussed in the next section.

Conceptualizing Play

The concept of play can be understood in various ways. Play can be, for instance, divided into different domains of action and feeling (Caillois, 2001); understood in terms of meaningful choices made during an experience (Salen & Zimmerman, 2004); or a sequence of actions that follow designed procedures (Bogost, 2008). The variety of lenses with which play is observed are varied, and the present study can benefit from an understanding of the distinct perspectives. These lenses are discussed further below.

Action and Feeling

In his seminal work on play, Caillois (2001) categorizes play into four different types: (1) *agon*: competitive games, where winning is the ultimate intention and a winner should be crowned; (2) *alea*: games of chance, in which random and uncontrollable variables lead to a definitive positive or negative outcome for the player; (3) *mimicry*: imitation, or roleplay, an impersonation of a character; and, finally, (4) *ilinx*: play in which the ultimate goal is to alter

mind state and/or perceptions with disorder or dizziness. Taking into consideration the immediate goals of this study, the concept of *mimicry* will be discussed further.

Caillois (2001) mentions carnivals and theater plays to exemplify *mimicry*. Currently, however, we can observe that such conceptualization can be transferred to a myriad of physical and digital games, most notably roleplaying games (RPGs). Players in RPGs, impersonate characters, understanding and emulating someone other than the self, while maintaining their own individuality. Moreover, Caillois (2001) argues that *mimicry*, like all play, is collective; the intention is to convince others of the authenticity of the represented character. According to Caillois, spectators are essential to such collectiveness of *mimicry*; furthermore, in expanding such concept to recent and current games, *mimicry* can also be applied to interactions with others in Massive Multiplayer Online games (MMOs) and even with fictional, non-playable characters (NPCs) in single player games. Finally, *mimicry* can also be corrupted, or interrupted. Corruption occurs “when simulation is no longer accepted as such, when the one who is disguised believes that his role, travesty, or mask is real” (Caillois, 2001, p. 49). In other words, players can be led to believe that they are the character, losing the sense of self.

It is possible to theorize that *mimicry* demands a certain level of empathy from the impersonator. In narrative video games, to be able to understand how one should behave when projecting their identity unto a virtual avatar, one should comprehend the social context where the character is situated, as well as their designed emotions and personality. Naturally, since games vary in terms of the depth and portrayal of characters’ emotional states, different types of *mimicry* can be enacted. Examples include: games that provide characters with defined identities and pre-defined verbal actions, such as *Life is Strange* (Dontnod Entertainment, 2015) and its

protagonist Max, as aspiring photographer; games that provide characters with predefined visual identities, such as *Dragon Quest XI* (Square Enix, 2017), but that are silent and nameless, allowing the player to rename the protagonist according to their will and project their feelings and emotions; and games that allow players to manipulate the character's visual identities and personalities, such as massive multiplayer online RPGs (or MMORPGs, in short). Due to the choice to create a well-defined and consistent narrative in this study, my focus has been on characters that are already fully developed visually and emotionally.

Meaningful Choices

Play can also be considered a sequence of meaningful choices made in a context governed by specific rules (Salen & Zimmerman, 2004). The rules in play exist within a specific space and design determines the limited actions that can be carried out. Salen & Zimmerman (2004) divide choices in playful environments in two different categories: *micro* and *macro* choices. Micro choices refer to small decisions made by the player in the designed system, while macro choices are the connection and interpretation of micro choices. The possible choices should be carefully designed as to allow players to experience and interpret the outcomes of their decisions, leading to meaningful play (Salen & Zimmerman, 2004). According to Salen and Zimmerman, these meanings are made possible by the well-defined rules and space of the game.

Procedural/Rule-Based Process

Bogost (2008) adds to the theorization of play conceptualizing it as a procedural endeavor. Bogost discusses play as a sequence of experienced “rule-based models” (p. 123). Within these models, players can exercise their skills, identities, and styles of play, which are made possible due to the existence of the established designed rules. Bogost argues that games

are modes of expression that benefit from *procedural rhetoric*, “the practice of using processes persuasively” (p. 125) and should be analyzed as such to identify the underlying values and goals of a play space. Taking such arguments into account, play should not be understood only in terms of fun, but as an exploration of a simulated environment with finite possibilities.

The argument for procedural rhetoric as the ideal lens to understand play and analyze games is not without its critics, and this debate is particularly relevant for the study of ethics and morality in gameplay. Sicart (2011) argues that thinking about games in procedural, rule-based terms limits players’ interpretations to the constraints of the game itself, ignoring their performance during the act of play and creativity. From a procedural perspective, according to Sicart, (2011), games are uniform and self-contained, and players’ interpretations and possible disruptive behaviors are of little interest. For the scholar, play should also consider players’ subjectivities, including ideological values and personal expression, so that the exploration of one’s own identity and ethics is made possible by game play. Thinking of games in a non-procedural manner allows us to observe play from a non-uniform perspective, taking into consideration not only the ideal, step-by-step way of playing, but also the disruptions and misunderstandings that may occur. More importantly, Sicart’s (2011) perspective empowers players by valuing their interpretations and actions along (or over) the intended designed message.

Educational considerations can offer a bridge to connect Bogost’s (2008) procedural rhetoric and Sicart’s (2011) arguments against procedurality. Drawing on previous theorizations on concept experiential learning (e.g., Bateman, 2017; Moon, 2004), I argue that, while the procedural rhetoric of games may be restrictive at a first glance when thinking of games as self-

contained products, such rhetoric can be beneficial considering games as instructional tools used by mediating teachers who, following game activities, foster reflection and discussion about actions taken in the game world.

Game-based Learning

The study of games as valuable tools for learning has expanded extensively in the last decade. Researchers have identified benefits of using game-based pedagogical approaches in several knowledge domains, such as language (e.g., Cornillie, Thorne, & Desmet, 2012; Rama, Black, van Es, & Warschauer, 2012; Reinders & Wattana, 2011; Sylvén & Sundqvist, 2012), science (e.g. Lester et al., 2014), history, and physical education (see Young et al., 2012). Theoretical and empirical studies on how games can foster perspective-taking and empathy, however, are limited (e.g., Gee, 2011; Schrier, 2017; Schrier & Gibson, 2010; Zheng et al., 2012). This section provides an overview of game-based learning, including its history and core principles, followed by empirical evidence on game-based learning for soft skills development that can suggest benefits for the present study.

Game-Based Learning: An Overview

Game-based learning is an educational approach and paradigm for instruction (Squire, 2007) in constant development. During the infancy of the field, researchers reported the struggle of educational theorists in applying known theories to examining the emerging media of games (Rieber, 1996). However, as the complexity of games evolved throughout the years, so have the theorizations related to their benefits to learning processes (Gee, 2003, 2005; Steinkuehler & Squire, 2009). This section provides an overview of studies in game-based learning, the benefits

of the approach, as well as pedagogical possibilities related to the different tools discussed in empirical studies.

Rieber (1996) discusses the benefits of learning in three distinct types of virtual environments: microworlds, simulations, and games. Microworlds are categorized by Rieber (1996) as contexts where the learner can experiment with concepts and tools; these environments can be either designed or found in the real world. The learner, not an instructor, is the one who decides if a tool or context is a microworld, for this determination depends on one's perception towards learning and expertise regarding the content which the environment allows reflection of. Furthermore, simulations present an imagined situation in which content is addressed and can be experimented with; they offer a glimpse of possible outcomes and resolutions related to particular phenomena. In his discussion, Rieber (1996) focuses on the potential of simulations to understand the underlying systems of educational and theoretical concepts and contexts. Although microworlds and simulations tools can allow for interactive and situated learning, games are associated with higher contributions for self-regulated learning and motivation. Games are also associated with a possibility for elevated intrinsic motivation (Rieber, 1996). In terms of content, games often offer "endogenous fantasies", a careful integration of narratives and learning content:

[in endogenous fantasies,] one cannot tell where the game stops and the content begins.

(...) The advantage of an endogenous fantasy is that if the learner is interested in the fantasy, he or she will consequently be interested in the content. A good endogenous fantasy is an important first step towards intrinsic motivation (Rieber, 1996, p. 50).

Rieber's arguments regarding such fantasies are particularly relevant for the present study, as the ethical decision-making processes are framed within a fictional emotional storyline in the game used in our intervention.

Design affordances of games that can foster learning are also investigated. focuses on the design affordances of games that can foster learning. Well-designed games, according to Gee (2005): (1) promote learners' agency, as they "make things happen" (p. 6) in the environment and manipulate it according to the possibilities of the design; (2) allow learners to customize their learning experience according to their learning preferences; (3) provide characters with which the player can interact as and/or with and often become heavily invested in; (4) allow learners to manipulate environments and associate particular areas of knowledge with their related domains; (5) offer problems with growing complexity as the game progresses; (6) present information in context and when (or how) it is needed to progress in the play process; and (7), facilitate understanding the game as a system where a finite number of actions are possible. Although Gee (2005) further characteristics of games, and some of which can be associated with micro worlds and simulations, the aspects listed here are key to thinking of games and their design in relation to ethical decision-making.

Drawing upon a series of studies on the relationship between games and learning, Steinkuehler and Squire (2009) describe several principles of virtual worlds that teachers should be aware of. A central aspect of Steinkuehler and Squire's (2009) reasoning is the opportunity that learners are given, in games, to be active producers of content and meaning, and not mere recipients of information. Furthermore, games are also described as valuable learning tools due to their potential to connect different learners in a virtual space and promote collective problem-

solving. Lastly, teachers should embrace their role as mediators between learner and content, and not “lone gateways of information” (p. 9), considering that factual knowledge is easily accessible through simple searches on digital media. Instructors should aid learners in evaluating the quality of tools and assessing their potential learning benefits.

As the field grows, different foci of studies that relate games to learning emerge. Researchers have, for instance, observed how commercial games can foster learning practices (Kronenberg, 2012; Zheng et al., 2012); how game design can harness students’ design thinking skills and creativity (Kafai & Burke, 2015; Owston, Wideman, Ronda, & Brown, 2009; Pepler & Kafai, 2007); and how games design for educational purposes, referred to as *serious games* (Squire, 2007; Young et al., 2012) can be valuable learning tools. Although this study benefits from theories that emerged in a variety of sub-domains, focusing on understanding serious games is particularly crucial for our design process and related pedagogical interventions.

Serious games are, simply put, educational games that are developed to address specific content and/or content areas, and that are supposed to be used in instructional contexts (Squire, 2007). In a review of empirical research on serious games, Young et al. (2012) found limited evidence on the effectiveness of these tools when used in experimental conditions and/or in classroom contexts. However, based on their results and gaps of content and pedagogical approaches identified, Young et al. (2012) suggest that studies often fail due to the perception of games as self-contained learning materials; in their perspective, teachers should facilitate the play process and promote reflection. In conclusion, in relation to research and pedagogical dissemination, scholars and teachers should make their serious games available to other educators so that instructional approaches related to them can be improved and assessed.

The considerations discussed in this section asking in addressing the *why* to use games, in general, in the classroom. Next, studies and concepts that relate directly to games and morality, particularly narrative ones, are discussed.

Narrative Games and Morality

Morality surfaced as a theme and phenomenon in digital games with the release of *Ultima IV*, in 1985 (Heron & Belford, 2014; Sicart, 2013). In *Ultima IV*, players made decisions that were inherently binary (Joeckel, Bowman, & Dogruel, 2012), that is, good or bad in nature. Although technical limitations did not allow for greater complexity, the morality mechanics in *Ultima IV* presented a framework to be used and expanded upon in the decades to come. Advances in hardware and the evolving quality of narrative games have allowed designers to create “ethically notable” (Zagal, 2009, p. 7) games. These games often present issues and choices that are varied, altering the narrative and the game experience qualitatively in accordance with players actions. Consequently, games with moral narratives can also foster player reflection on their feelings and moral values.

Factors That Influence Morality in Game Play

The academic literature on ethics, morality, and empathy as it relates to game play indicates that the ethical influence and its potential for individual reflection varies according to several factors. On the one hand, it is important to consider features of game design, which allow for a limited number of actions and presents a set list of objectives (Sicart, 2005, 2009, 2013) . If morality is implemented as a “good vs. evil” binary, players can to approach problems from a utilitarian perspective (Schulzke, 2010) prioritizing decisions that advance the game in a manner

that would benefit them in the progression of the adventure and/or narrative (Heron & Belford, 2014).

The moral perspectives that players bring into the game and their interactive experiences can affect empathy during the game play process. For instance, Schmierbach & Limperos (2013) argue that one's empathy influences their enjoyment in moral outcomes. Furthermore, this study also approaches the subject of guilt, which can add an extra layer of complexity to Grizzard et al.'s (2014) arguments: in Schmierbach and Limperos' (2013) study, players who scored more on an empathy scale were more likely to express guilt in making decisions that did not correspond to their moral dispositions. Furthermore, Schrier (2017), in a study in which the roleplaying game *Fable III* was used to develop ethical-thinking skills in young adult males, found that participants cultivated relationships with virtual characters during gameplay. Such relationships influenced their emotional and ethical decision-making in the game *Fable III*. Interactions with non-playable characters helped participants to understand "differing perspectives [that] helped guide the player to think through the sides of an issue" (p. 855) and reflect about their choices in a world where experimentation is safe and encouraged.

Players' attitudes towards game play also influence their moral decisions and their perceptions on the acceptability of their actions. Klimmt et al. (2006) and Hartmann and Vorderer (2010) discuss players' moral management and/or disengagement, that is, the separation between their own values and the fictional nature of virtual worlds, to justify immoral actions in games. In an experimental study that investigated reasons for moral disengagement in virtual environments, Hartmann and Vorderer (2010) discuss that participants' familiarity with

games and awareness of the game as a simulated world led to reduced negative emotions when carrying out unjustified and/or immoral actions.

Finally, in addition to *game design* and *participant perspective*, it is also relevant to consider the *encouragement for reflection* as part of the moral reasoning related to games. The existence of this dimension is introduced in Sadowski et al.'s (2013) study, in which the authors describe the design and testing experiences with four different educational games to foster learners' sustainability ethics. According to Sadowski et al. (2013), reflection assists participants in "re-living their experiences" (p. 1333), which may lead to conflicts between their moral aspirations and decisions made in game environments. Furthermore, distinct approaches can lead participants to different moral considerations: in discussing their actions with others, one can compare their moral decisions with counterparts; in addition, when reflecting individually through critical writing, participants are given a chance to rethink their decision-making process and identify their biases.

Design Characteristics That Can Foster Morality in Play

Previous research does not indicate game *types* that are more effective than others for fostering moral reasoning and empathy. Rather, the literature indicates that it is a question of content and design goals rather than genre: de Smale et al.'s (2019) analysis on the development of the independent game *This War of Mine* indicates that designers' attitudes and level of detail for moral aspects of the narrative were crucial during the creation process.

The focus on game story and its characters to create morally-laden decision-making possibilities is discussed in recent empirical studies and theoretical models that relate games to ethics and morality (Katsarov et al., 2019; Ryan, Staines, & Formosa, 2017; Schrier, 2015, 2019;

Sicart, 2013). Narrative games create possibilities for players to grow develop an identity in the virtual environment and relate to NPCs that populate the game world (Schrier, 2019), taking these relationships into account when making decisions. Furthermore, these games often allow the player to experience the consequence of their choices, whether intentional or not. Morally complex games approach a wide variety of ethical and empathic issues, such as the value of one's life, as in the case of *The Walking Dead* (Ryan et al., 2017) and *This War of Mine* (de Smale et al., 2019), as well as relatedness and prioritization, in the case of *Papers, Please* (Heron & Belford, 2014). To create these moral experiences, such games position the player as a main character who is responsible for a variety of NPCs. Consequences of those decisions are also portrayed, impacting players' emotions and behavior and potentially increasing awareness of their role in following choices. That said, games that approach morality effectively succeed in giving players just-in-time feedback regarding the impact of their decisions.

The Role of Characters in Moral Game Play

Characters can be valuable motivators for moral reflection and provide judgment regarding players' actions (Schrier, 2019), promoting empathy in the process. Drawing on examples from popular commercial games, Schrier (2019) argues that NPCs can be designed so that they react emotionally to players' choices and question their decisions, either directly or contextually through observation of consequences (Consalvo, Busch, & Jong, 2019). Siyahhan et al. (2011) indicates that, in a game-based learning context, such influence is also observed. On the other hand, non-playable characters can also discourage players' empathy by emphasizing violence over peaceful negotiation (Schmierbach & Limperos, 2013). First-person shooters, for instance, often do not justify in-game violent behavior and focus solely on game mechanics

rather than moral issues (Gotterbarn, 2010), rendering empathy undesirable as a means of story progression. As a consequence, players may separate their morality from in-game action to justify violent behavior (Klimmt et al., 2006).

Further Considerations on Morality and Game-Based Learning

Drawing on previous literature that investigated and theorized the role of moral decision-making and empathy in digital games, it is possible to observe that issues of ethics are raised both in game design and development (e.g. de Smale et al., 2019) and game play (e.g. Ewell et al., 2016; Heron & Belford, 2014; Tamborini et al., 2018). That said, the affordances and constraints of the virtual environment are to be considered as important as players' intentions and behavior during game play (Sicart, 2005) for a more comprehensive analysis of morality in digital play.

This discussion on morality and game-based learning, as well as the arguments derived from the articles here raised, are by no means exhaustive. As the study of the correlation between morality and games increases in depth and scope, it is also necessary to attend to the constant development of game genres and possible designs that afford ethics and empathy.

Game Design

This section describes the development process of a game that addresses the issue of unethical behavior in a local government context, considering the theoretical discussion presented in the previous sections. Game design process was divided into two steps: (1) development of design conjectures; and (2) design process. Additionally, the design process encompassed three phases: (1) instructional context observation; (2) game narrative and mechanics development; and (3) playtesting.

Development of Design Conjectures

The literature review on morality, play, and game-based learning, as well as the relationships among these areas, allows for the establishment of design conjectures (Sandoval, 2014) for creating a game-based tool that fosters one's reflection on his/her/their own decision-making process. According to Sandoval (2014), conjecture mapping can assist researchers in identifying processes derived from theoretical discussions that may lead to specific intervention outcomes. This approach is valuable, in this design, to identify game characteristics that can result in mechanically simple but conceptually complex moral decisions in a virtual game environment.

Conjecture maps are read from left to right and organized in three main component parts: first, the *embodiment* column describes the resources and organization, such as tools and materials and participant structures, of an educational environment or tool. This design employs narrative game-based environments (Ryan et al., 2017; de Smale et al., 2019; Heron & Belford, 2014) in which moral decision prompts are included. Furthermore, as the design is the specific focus of the present study, the focused task is game play. Mediating processes are the “theoretically salient” (Sandoval, 2014, p. 27) concepts that can lead to established (or, in this case, desired) intervention outcomes. In the conjecture map generated for this study, mediating processes include development of relationships with in-game characters (Schrier, 2019) that situate meaningful moral decisions (Salen & Zimmerman, 2004) in a social context. In-game decision prompts benefit from a procedural approach to moral decision-making and its underlying processes (Narvaez & Lapsley, 2005; Rest, 1982); these decisions receive feedback from NPCs (Ryan et al., 2017).

Table 2.1

Conjecture Map for Developing Narrative-Based Serious Moral Games.

Embodiment	Mediating Processes	Desired Outcomes
<i>Tools/Materials:</i>		
Narrative game-based environment (Ryan et al., 2017; de Smale et al., 2019; Heron & Belford, 2014)	<p>Development of relationships with NPCs (Schrier, 2019)</p> <p>Possibility for <i>meaningful choices</i> (Salen & Zimmerman, 2004)</p> <p>Nuanced opportunities for morality and emotional realism (de Smale et al., 2019)</p> <p>Procedural rhetoric (Bogost, 2008) for organization of environment and limitation of possibilities</p>	<p>Establishment with emotional connections with in-game characters</p> <p>Moral decisions based on individual experience</p> <p>Simplification of controls and outcomes to facilitate comparison among participants</p>
In-game moral decision prompts	<p>Moral decision-making process (Rest, 1982)</p> <p>Underlying processes in moral decision-making: sensitivity; judgment; motivation; and action (Narvaez & Lapsley, 2005)</p> <p>In-game qualitative evaluation of players' decisions (Ryan et al., 2017)</p>	<p>Identification of participants' processes and stances in moral decision-making</p> <p>Understanding of the role of empathy in the moral decision-making process</p>
<i>Task + Participant Structures:</i>		
Game play	<p>Mimicry; character impersonation and empathizing (Caillois, 2001; Consalvo, Busch, & Jong, 2019; Siyahhan et al., 2011)</p>	<p>Identification of participants' processes and stances in moral decision-making</p> <p>Understanding of the role of empathy in the moral decision-making process</p>

These theorizations derived from the literature are expected to lead to moral decision-making that is influenced by an individual's lived experience and emotions. Furthermore, observing decision-making from a procedural standpoint can assist the understanding of players' reasoning and processes for moral decisions, in addition to the influence of empathy in such process. Finally, the act of game play in on itself presents an opportunity for attaining such outcomes through impersonation of virtual characters and relating to others in the virtual world (Caillois, 2001; Consalvo, Busch, & Jong, 2019; Siyahhan et al., 2011). These conjectures were used for the development of a game-based tool. The design process is explicated and outlined next.

Game Testing

The narrative game was tested with three prospective government workers which, at the time of testing, were exercising assistantship duties at a university-based organization that provides services for local governments in the southern United States. These three participants were the following: Alana, a female African-American, Serena, a female Asian, and Kyle, a male Caucasian. All participants presented varying levels of familiarity with the visual novel game format, with Kyle being the most familiar and Alana the least. It is also relevant to emphasize that this testing phase was also framed as a data collection procedure for a research study that aimed at investigating learners' moral decision-making processes in game environments. That said, data was derived from screen recordings of participants' game play in a controlled setting (Kessler & Vesterlund, 2015) and following focus group. Research procedures were approved by the author's university Institutional Review Board.

Design Process

The game developed based on the design conjectures (Sandoval, 2014) is a single player, linear narrative-based game that I have created in cooperation with three subject matter experts in Internal Controls in Local Governments. The development of this tool preceded a research design that aims at identifying learners' in-game moral decision-making processes in more detail. This section describes the design process, grounded in the design conjectures presented previously, as well as a summarized description of the game created following such reasoning.

Figure 2.1

Scene Of Game Made Following Design Conjectures



First Phase: Context Observation and Preliminary Design Decisions

The development process started with an observation of a continuing professional education setting focused on local governments. This observation was carried out so that the researcher could gather content ideas that could be relevant to be experienced interactively by students, as well as to identify game formats that would be suitable for the context considering

the resources available. Observation in the instructional environment demonstrated that learners can present difficulty with game-based tools due to the demographic profiles of potential participants, who do not relate to age groups commonly associated with frequent game players. That said, the assumption that (1) learners were unfamiliar with semiotic domains (Gee, 2003) of narrative games a) could be problematic was raised. Identifying this characteristic of learner profiles allowed for the decision to develop a simple two-dimensional narrative game that facilitates navigation of the game world for those inexperienced with the semiotic domain. This format can lead to decrease of undesired mental effort during play (Ak & Kutlu, 2017; Schrader & Bastiaens, 2012).

Second Phase: Game Narrative and Mechanics Development

Following the observation phase, the researcher developed the browser-based, interactive narrative game to be used in the intervention. To decrease game complexity, the “visual novel” (Lee & Chia, 2015) format was adopted. Visual novels are a type of video game based on narrative and decisions. In these games, mechanics are limited, and the story and its possible ramifications are emphasized. This focus allows for the development of complex narrative experiences which are usually centered on a main character, controlled by the player, who interacts with the environment in first person; that is, the player sees the game through the protagonist’s eyes. This format, thus, allows the player to experience mimicry (Caillois, 2001) and roleplay in a simplified and direct manner. Nevertheless, it is important to attest that the narrative presented complex social aspects, such as ideological, demographic, and emotional characteristics to increase detail of the moral issues raised.

Development of the game was carried out using the visual novel creation software *TyranoBuilder Visual Studio* (STRIKEWORKS, 2010) and following game mechanisms for moral development presented by previous research (Katsarov et al., 2017; Ryan et al., 2017; Schrier, 2019). The narrative was crafted in order to incentivize prosocial behavior, negotiation, and position the player in situations in which actions had to be taken under pressure (Katsarov et al., 2017). Learners were encouraged to make use of moral sensitivity, relating to non-playable characters and taking possible consequences to them into account when making decisions, and drawing upon moral judgment to decide on appropriate courses of action (Ryan et al., 2017). Moreover, action constraints were placed to guarantee that scenarios would be shaped as moral dilemmas (Schrier, 2019) where nuanced decisions that cannot be explicated in a simple good versus evil binary (Consalvo et al., 2016) need to be made.

Figure 2.2

One Of The Decision Points In The Internal Controls Game



Third phase: Playtesting

Following development, specific content and usability of the tool were discussed with one subject matter in detail. Modifications done during this phase include change of job titles of both playable and non-playable characters for contextual accuracy, as well as alteration in characters' physical appearance and emotions. After such modifications were finalized, the tool was tested once again by the subject-matter expert, who did not encounter further issues in the game.

Description of the Resulting Artifact

The game, developed in alignment with the design conjectures and taking into consideration expert feedback, is a single-player, visual novel-style game where participants control the Human Resources director for a local government, Joe. Throughout the game, players make nuanced decisions that require thought regarding possible ethical, social, and financial consequences. The situation presented to the player is the following: the Chairwoman of the governing body wants to hire her nephew, who has no experience, for an accounting position. Players are given several possibilities of reaction, such as personally confronting the Chairwoman regarding the issue, bringing the mayor's attention to such behavior, or simply go through with the decision. Every choice has implications when proceeding in the game, providing personalized experiences according to player behavior.

Moral Decision-Making Possibilities

The game was found to be effective in engaging participants in a moral decision-making situation framed in a professional context. As previously theorized, the contextualization of decisions led participants to attribute specific meanings to the situation at hand, prioritizing

either structural or emotional underlying processes in their choices (Narvaez & Lapsley, 2005). More specifically, two participants, Serena and Alana, took primarily into consideration the main character's financial hurdles and delicate family situation, while Kyle referred to organizational expectations as the main factor for his decisions. That said, participants identified the connection established with NPCs (Schrier, 2019), although this relatedness was not observed to be at the same level for all. The two excerpts below exemplify such perspectives:

You didn't want to make too many waves, because you did have those medical bills to pay. (Serena)

If this ship sinks, we're all going down with it, myself included as the finance director. (Kyle)

During the focus group conducted after the game play experience, participants were able to understand theirs and others' moral decision-making processes and perspectives. This was evident in conversations where participants contrasted their outcomes and explicated the reasoning behind their decisions. It is important to note, however, that this possibility identified extends beyond the design, suggesting supporting pedagogical interventions using this game-based tool. The game is, thus, not a self-contained instructional material, but an artifact that can be used and adapted for instructors depending on intended outcomes and educational strategies.

Moral Decision-Making Constraints

Participants also reported constraints to decision-making within the game. Firstly, the narrative of the game did not inform players of crucial details that could be known to make more informed decisions. Serena argues, for instance, that her lack of confrontation throughout the game play was a strategy adopted after assuming that the game "would last longer".

Furthermore, lack of complex details regarding characters' backgrounds was one of the factors that resulted in Kyle adopting a perspective of "a learning simulation" rather than a game scenario.

Furthermore, there was also limitation in terms of what players could decide on doing. Participants felt, for example, that the main character could have adopted a more confrontational stance towards the mayor, illustrated by Serena's statement below:

You never actually say no, I'm not going to hire him. (Serena)

These arguments raise reflections regarding the design of the game, particularly as it concerns the optimal game genre and format to be used. Although simple controls and outcomes were theorized to assist the comparison and contrast of decisions after the game, this simplicity meant that players often could not act according to their desired moral choices.

General Discussion

The visual novel game format was considered effective in helping participants exercise their moral decision-making skills, although it constrained their choices considerably. A specific stage of the game in which players are presented with simplified organizational policies was of relevance during the post-play discussion, as participants classified this mechanic as "clunky". Suggestions, however, were presented; participants argue that these policies could be shown to players in the form of a constant toolbar.

Table 2.2

Modified Conjecture Map for Developing Narrative-Based Serious Moral Games.

Embodiment	Mediating Processes	Desired Outcomes
<i>Tools/Materials:</i>		
Narrative game-based environment (Ryan et al., 2017; de Smale et al., 2019; Heron & Belford, 2014)	<p>Development of relationships with NPCs (Schrier, 2019)</p> <p>Possibility for <i>meaningful choices</i> (Salen & Zimmerman, 2004)</p> <p>Nuanced opportunities for morality and emotional realism (de Smale et al., 2019)</p> <p>Procedural rhetoric (Bogost, 2008) for organization of environment and limitation of possibilities</p>	<p>Establishment with emotional connections with in-game characters</p> <p>Moral decisions based on individual experience</p> <p>Complex, but clear narrative that fosters individual exploration</p>
In-game moral decision prompts	<p>Moral decision-making process (Rest, 1982)</p> <p>Underlying processes in moral decision-making: sensitivity; judgment; motivation; and action (Narvaez & Lapsley, 2005)</p> <p>In-game qualitative evaluation of players' decisions (Ryan et al., 2017)</p>	<p>Identification of participants' processes and stances in moral decision-making</p> <p>Understanding of the role of empathy in the moral decision-making process</p>
<i>Task + Participant Structures:</i>		
Game play	Mimicry; character impersonation and empathizing (Caillois, 2001; Consalvo, Busch, & Jong, 2019; Siyahhan et al., 2011)	Identification of participants' processes and stances in moral decision-making
Group discussion	<p>Experiential-focused questions</p> <p>Teacher facilitation and mediation (Hafner & Miller, 2011; Moon, 2004)</p>	<p>Identification of participants' processes and stances in moral decision-making</p> <p>Understanding of the role of empathy in the moral decision-making process</p> <p>Moral awareness through comparison with peers' experiences</p>

Participant feedback was indeed valuable for the design process. Their impressions, both negative and positive, assist in validating and modifying conjectures for this type of game design. The researcher's openness in receiving such feedback led to participants objectively mentioning of areas of the game that could be improved, followed by justification for such arguments. Among relevant contributions, testers argued for: (1) the inclusion of more nuanced details to the narrative; (2) clearer instructions regarding timing of decisions and potential consequences, adding, for instance, a clock to the interface; and (3) the addition of supporting characters with whom the player can interact to make decisions considering different perspectives. These considerations are crucial for further development of the tool, leading to a process of considering other game genres that can be suitable for the intended outcomes, such as roleplaying games.

Finally, participant contributions also led to an expansion of the design conjectures. Pedagogical strategies, such as having students play collectively and discuss among themselves before making in-game decisions, were raised. Alana drew on her knowledge of existing classroom practices, such as experiential learning, to argue for the benefit of this approach. As a result, the design conjectures (Sandoval, 2014) were slightly modified to include a new possibility of task. This modified framework, based on both feedback and evidence of the effectiveness of the process of discussing moral decisions following the intervention, will guide further development of the game and related educational activities.

Final Considerations

This article presented a conceptual framework and design conjectures for understanding how ethically-notable (Zagal, 2009) serious games (Squire, 2007) can be developed and

implemented in instructional environments, drawing on previous literature on theories of ethics and morality as procedural processes (Rest, 1982), play (Caillois, 2001; Huizinga, 1950), game-based learning (e.g. Squire, 2007), and specific studies that investigate the relationship between games and morality (e.g. Schrier, 2019; Sicart, 2013). Furthermore, a visual novel game was developed following these conjectures and tested with three participants within a research study that aimed at investigating learners' moral decision-making processes in game environments. The game I have developed allowed players to act according to decision-making priorities, such as considering either characters' well-being or work-related rules as foci. There were, however, issues of simplicity of decisions and lack of clarity of in-game instructions reported by participants. This process illustrates the difficulty in transferring moral game design models (Ryan et al., 2017; Schrier, 2019) to practice; additionally, it indicates the need for further development of the game to increase effectiveness in classroom contexts.

The design conjectures, as well as the game design itself, are not without its limitations. Firstly, considering the recent nature of models that relate digital games to moral decision-making, it is possible that the theories discussed here will be further developed and restructured in the near future, considering new game narratives and mechanics. Secondly, the game developed as part of this study and related modifications to design conjectures account for experiences of adult learners. A moral game for a different age group can look and feel very different. Finally, the content and narrative of the game are limited by my rather rudimentary development skills.

All in all, this design process demonstrates a promising area for development and research. Developing a game with a myriad of theoretical considerations in mind is certainly a

challenging endeavor, but it is a valuable experience for teachers and designers alike. As game creation tools, such as *TyranoBuilder Visual Novel Studio* (STRIKEWORKS, 2010) and *RPG Maker MV* (Enterbrain, 2015) become widely accessible, they add another affordable, though time consuming, possibility for addressing instructional objectives.

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CHAPTER 3

THE PROCESS OF MORAL DECISION-MAKING IN A GAME-BASED NARRATIVE
SCENARIO THROUGH THE EXPERIENCE OF FUTURE GOVERNMENT WORKERS²

² Rafael Leonardo da Silva. Accepted by *TechTrends*. Reprinted here with permission of publisher.

ABSTRACT

This article describes the results of a qualitative study that aimed at investigating moral decision-making processes of prospective government workers using a game-based tool. Three participants volunteered to participate in the research process, which included playing a short point-and-click narrative game and a focus group. Data was analyzed through thematic analysis as well as narrative maps which emphasized players' decisions. Analysis indicated similarities among participants' moral decision-making processes, from initial experiment and struggles with the tool to the application of personal and professional experiences to the game scenario. Additionally, levels of empathic engagement were found to be conditioned upon participants' approaches to play. The results of this exploratory study shed light into aspects of moral decision-making with serious games and allow for the suggestion of instructional practices to raise learners' moral self-awareness through game-based learning.

Introduction

The relationship between video game narratives and morality has been a theme of discussion in educational technology and game-based learning literature in recent years (Huang & Ho, 2018; Schrier 2017, 2019). These developments build upon (and converse with) theoretical and practical contributions from game studies (e.g., Ryan et al., 2017; Sicart, 2009). Although rich theorizations and models for moral game development already exist (Ryan et al. 2017; Schrier, 2019), the process of moral decision-making within game environments can benefit from further investigations to assist instructors and researchers in organizing teaching strategies that utilize such games. This study, thus, draws on models of morality as a process (Narvaez & Lapsley, 2005; Rest, 1982) to investigate how graduate students, particularly prospective government workers, make morally-laden decisions within a game that simulates a case of nepotism within a local government setting.

This article is organized as follows: first, a literature review introduces concepts that are central to this research, namely the concept and practice of play, game-based learning, moral decision-making, as well as a discussion of previous studies that investigated the connection between moral decision-making and games. The methods adopted for this study are, then, presented, outlining the process of this design-based research (Amiel & Reeves, 2008; Barab & Squire, 2004), qualitative-focused (Denzin & Lincoln, 2005; Freeman, 2017) investigation. This discussion on the methods is followed by the results section, which presents the themes derived from data and a discussion that outlines the moral decision-making process generated from the analysis. The final considerations present a summary of the possible contributions, in addition to the limitations, of this study.

Literature Review

Concept and Practice of Play

Conceptualizations of play have been a theme in theoretical reflections for decades (Caillois, 2001; Huizinga, 1950), and their influence is clear on how games are designed and perceived. Play has been defined, for example, as a phenomenon that occurs in a structured magic circle where specific rules and behaviors are prioritized over the real-life context (Huizinga, 1950/2016); this magic circle, however, requires attention and monitoring, as it is fragile in nature (Salen & Zimmerman, 2005). Furthermore, these self-contained spaces are settings where players are encouraged to adopt specific goals, such as winning, betting, roleplaying, or mind-altering (Caillois, 2001).

Specifically relevant for this study is the concept of mimicry, which relates to role play, impersonation of one other than the self (Caillois, 2001). When play occurs in a space where mimicry is encouraged, such as most narrative role-playing games (RPGs), players embody and empathize with the stories of characters that inhabit virtual environments (Gee, 2011). In such contexts, choices made by players are meaningful for the progression of the narrative (Salen & Zimmerman, 2005).

It is important to note, however, that players' decisions are bound by a game's rules and constraints (Dickey, 2005; Sicart, 2009). In games, play occurs within domains that are governed by rules crafted to persuade players into progressing through a simulated environment by exploring its limits. According to Bogost (2008), games are composed of a sequence of processes in which players make choices constrained by the limits of the space. This understanding of

games and play as structured environments and activities is essential for the organization of game-based learning practices.

Game-Based Learning

Games are environments that benefit from the phenomenon of play, offering fantasies integrated into a narrative that may offer educational possibilities (Rieber, 1996). Naturally, not all games are created equal, as they vary in terms of genre and quality. This study, thus, adopts Gee's (2005) categorizations and definitions of “good games”, emphasizing the potential of games to present characters that players can be emotionally invested in, solving meaningful problems within the context of a narrative that provides feedback regarding players' actions. The use of these environments in education is at the center of game-based learning theory and practice (Squire, 2007).

Game-based learning can be adopted in instructional contexts to allow learners to role play and solve problems from distinct perspectives (Gee 2011). Identity plays, thus, a central role in the learning process. Embodying a character and navigating a simulated world can increase players' perception of agency, which may lead to improved learning outcomes (Zheng et al., 2012). Interaction with non-playable characters in virtual worlds may foster players' self-reflection as they navigate different worldviews and conflicting intentions (Schrier, 2017). As a result, one's virtual and real identities are, in play, in a process of constant negotiation that contributes to the development of a projective identity that fosters learning that is critical and situated (Gee, 2003).

Research on game-based learning has evolved along the medium. Recent studies have increased ramifications within this area of investigation, observing, for instance, the use of

games to teach complex subjects (Wouters et al., 2011). Subject-specific studies, such as investigations related to games and language (Ronimus et al., 2019), the development critical skills such as inquiry in game environments (Holbert and Wilensky, 2019), and theoretical developments on games and morality (Katsarov et al., 2019; Schrier, 2019) can be highlighted among recurring themes.

Moral Decision-Making

Morality has been characterized and defined in a myriad of ways, depending on philosophical stances and empirical practices. This study adopts a psychological perspective on morality, considering moral decision-making as a four-step process (Rest, 1982). According to Rest (1982), individuals make moral decisions by, first, interpreting a situation; then, a moral course of action is formulated; this course of action is considered, evaluated, and decided upon; and, finally, the action is implemented. These processes are influenced by an individual's moral expertise (Narvaez & Lapsley, 2005).

According to Narvaez and Lapsley (2005), moral expertise can be categorized as the complex understanding of four different processes: sensitivity, which is related to social communication and empathy, an understanding of others' emotions and motivations (Frith and Singer 2008); judgment, a more analytical view of morality that mainly considers objective consequences; motivation, which pertains to thoughtful agency and reasoning; and action, a process that prioritizes goals and strategical thinking. Such processes have been adopted by game studies researchers as lenses to develop games that engage players morally (Ryan et al., 2017).

Moral Decision-Making and Games

Recent studies have investigated how games can engage players morally by presenting contextually complex choices with unpredictable consequences (Consalvo et al., 2019; Schrier, 2019), fostering reflection on situated moral issues (Zagal, 2009). A key aspect in embedding moral decision-making in games is a complex narrative where players develop projected identities (Gee, 2003) and where their choices matter (Katsarov et al., 2019; Ryan et al., 2017; Schrier, 2015, 2019; Sicart, 2013). Efficient moral decision-making situations are often framed as moral dilemmas in which there is no correct or incorrect course of action (Zagal, 2009).

Several factors contribute to players' moral decision-making approaches, although definite connections are still debatable. Gaming experience may, for instance, lead players to argue for moral disengagement, that is, the separation of in-game and real-life morality (Klimmt et al., 2006) to reach desired ends in game spaces. Additionally, gender can be a significant factor for the presence of empathy during moral decision-making, as females are more likely to display attachment to virtual characters (Ewell et al., 2016; Greitemeyer et al., 2010). Such evidence is, however, not conclusive, as interventions were carried out within specific game environments and did not account for players' experiences in other virtual spaces.

Relevant models for identifying moral decision-making affordances in video games have been published in recent years. One of such models is the "four lenses" model developed by Staines et al. (2019). Staines et al. (2019) focus their discussion on drawing from four processes of morality – focus, sensitivity, judgment, and action – to develop tools for game-based learning interventions. Furthermore, Schrier (2015) introduces the Ethics Practice and Implementation Categorization (EPIC) model, which aims to help educators in identifying affordances for

empathy skills, as well as ethical reflection and reasoning, in existing games. These models were particularly relevant for the development of the game used in this study.

Methods

This investigation is an exploratory study framed as the first iteration in a design-based research (DBR) process (Amiel & Reeves, 2008; Barab & Squire, 2004) that aims at investigating how adult learners make moral decisions within the context of a narrative game focused on moral issues in a government workplace. The approach to inquiry adopted here allows researchers to investigate learning phenomena as they occur in complex educational spaces (Amiel & Reeves, 2008). In DBR, a research process is often comprised of several iterations to reach a humble theory (Cobb et al., 2003) that informs practice in specific settings and can suggest guidelines for future interventions and designs. In that sense, “the study of function — both of the design and of the resulting ecology of learning— is at the heart of the methodology” (Cobb et al., 2003). This study focuses on the interaction between learners and the design, observing data which can provide theoretical insights into a humble theory of game-based moral decision-making as well as suggestions for improvement of the tool.

Considering the pragmatic nature of DBR, researchers use quantitative and qualitative data collection methods for analysis according to the suitability for the studied context (e.g., Gordon & Baldwin-Philippi, 2014; Jong et al., 2017; Magnussen & Sørensen, 2010). Qualitative research methods, particularly, help investigators to reach an understanding of complex situations grounded in real-world contexts (Patton, 2014). They embrace the complexity of the environment and the subjectivities that participants bring in. Thus, qualitative inquiry generates data that can explain phenomena in detail, or, in Denzin & Lincoln’s words (Denzin & Lincoln,

2005), “make the world visible” (p. 3). This study, accordingly, employs qualitative methods to capture the nuanced process that is moral and empathic decision-making from the perspective of individuals in a governmental training context.

Research Questions

This study aims at investigating how prospective government workers make moral decisions within the context of a serious game (Squire, 2007) that provides a moral narrative set in a government environment. The following research questions are addressed:

- (1) How do learners make moral decisions within a single player game-based scenario simulating a governmental setting?
- (2) What is (if any) the role of empathy in learners' decision-making within the game?

Research site and participants

Data collection was carried out in a controlled setting in a building at a public university in the southern United States in the Spring of 2019. This setting was selected due to participants' familiarity and ease of access to this space where they could play the game privately with no interruptions. Participants were identified among students who are enrolled in the Master of Administration Program at a public university in the United States and were, during the study, exercising graduate assistant duties at a university-based organization that provides services to local governments. This study was carried out with the following research participants: (1) Kyle, who identifies as a Caucasian Male between the ages 20-25 and plays digital games at least once a day; Alana, who identifies as an African-American Female between the ages of 30-35 and plays digital games at least once a day; and Serena, who identifies as an Asian Female between the ages of 26-30 and plays digital games at least once a month. These three participants

presented and declared varying degrees of familiarity with the interactive format in which the game was designed, with Kyle being the most familiar, while Alana was the less familiar.

Data Collection

Data collected for this study were the following:

Video-recordings of Game Play

Participants played a game scenario focused on Internal Controls in Government I have designed, and their game play was video recorded.

Focus Group

To elaborate the analysis of video data, a focus group session, which was audio-recorded, was also conducted with participants soon after game play. The guide for the focus group session addressed the following themes: (1) reflective perspectives on ethical decision-making processes in the game scenario; (2) reflection on the game outcomes and qualitative evaluation of such outcomes; (3) importance of narrative in the gameplay process; (4) attitudes during the game play process; and (5) reflection on personal moral reasoning as a result of playing the game. Although these themes could be addressed in individual interviews for purposes of self-reflection, a focus group was adopted due to the possibility of comparing and contrasting experiences, emotions, and attitudes during play with other peers.

Game-based Artifact

The game used for this intervention is a single player, linear narrative-based game I have developed in cooperation with three subject matter experts in Internal Controls in Local Governments. In the game, participants assume the role of Joe, the Human Resources director for XYZ Government. As the narratives unfolds on the screen, they make morally laden decisions on

how to proceed in the story. The decisions are complex, given the background information: Joe's wife is in the hospital, and he is going through financial hurdles due to health care costs. Upon arriving at work one day, he faced with an alarming case of nepotism: his manager wants to hire her nephew for the financial department without any qualifications to back him up. If Joe decides to follow through with the decision, he is an accomplice in an unethical situation, but objecting might put his job, and his much-needed pay, at risk. All in all, the game was designed to address possible contextual complexities of participants' future workplaces (Figure 3.1).

Figure 3.1

Scene Of Game Made For The Study.



Data Collection Procedures

Participants played the game separately at a controlled setting. After consenting to the terms of the study and receiving an explanation about the nature of the study, participants individually played the game alone in a room, and their game play was video recorded. I, the researcher, remained close to the setting and was available to answer questions related to

usability that could arise during the game play experience. Each participant took approximately ten minutes to finish play through.

Upon completion of data collection of game play videos, participants were contacted to schedule the focus group. Prior to the start data collection, time was provided so that participants could respond to demographic questions that accompanied the focus group protocol and voice any comments regarding the questions to be asked. Audio recording of the focus group started after this process. This data collection procedure lasted for one hour.

Data Analysis

Participants' game play experiences were organized in narrative maps (Lapum, 2009) (see Appendices) through an inductive analysis process (Thomas, 2006), to summarize data and make sense of, for instance, their struggles with game controls and emotional reactions to the narrative. According to Lapum (2009), visual narrative maps allow the researchers to document "the narrative flow and sequence of events in participants' stories" (p. 87), including elements such as narrative participants and the story backdrop. In order to align this analytical perspective with the purposes of this study, the narrative maps generated emphasize the key events in participants' play stories, such as moments of struggle and key decisions. Furthermore, focus group data was analyzed following thematic analysis procedures (Braun & Clarke, 2006) using the qualitative data analysis software Atlas.Ti. Thematic analysis allows researchers to systematically observe patterns that emerge from data and develop the narrative crafted by the collection of themes.

Table 3.1

Initial codes for qualitative analysis

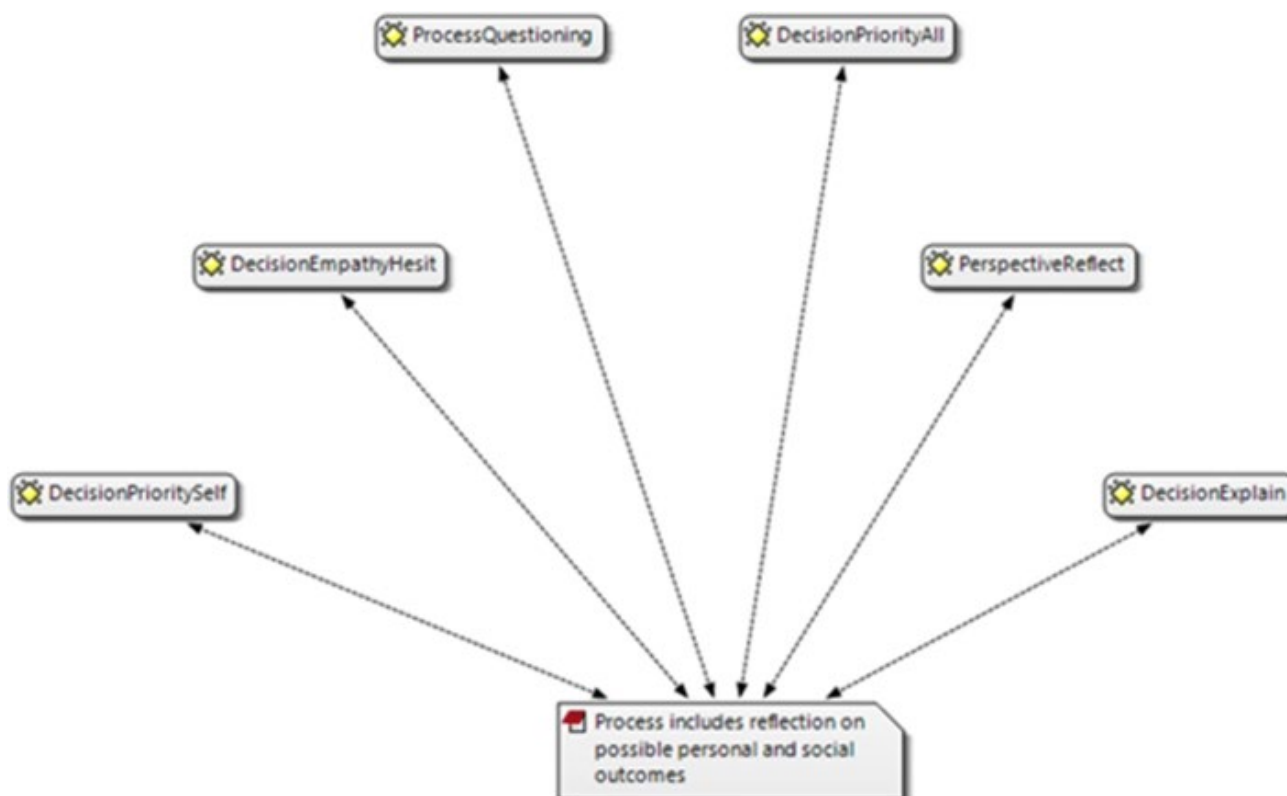
Decision	Game	Perspective	Process
DecisionEmpathy	GameConfuse	Contrast	ProcessQuestioning
DecisionEmpathy-	GameExplore	ParticipInfluence	
DecisionEmpathyHesit	GameLimit	PerspectiveCompareReal	
DecisionEvaluation	GameReflect	PerspectiveReflect	
DecisionExplain	GameReflectReal		
DecisionPersonalExp	GameReflectReal-		
DecisionPersonalExp-	GameSuggest		
DecisionPolicy	GameSuggestNarrative		
DecisionPriorityAll	GameSuggestTeach		
DecisionPrioritySelf			
DecisionRegret			

The analytical process unfolded as follows: first, I familiarized myself with data through repetitive reading and transcription of interview data, as well as generating narrative maps using visual data from game play; then, preliminary codes were established in the data. Such codes were organized in a hierarchical manner so specific data pertaining to code families and potential themes could be easily identified and, within these families, specific codes were included. Data excerpts related to codes were stored in the software's code manager.

These codes were, then, used for the establishment and definition of themes that represented a coherent summary of the meanings represented by a group of codes. A sample network view of the connection between codes and themes is presented in Figure 3.2.

Figure 3.2

Sample Network View Of Establishment Of A Theme Through Code Grouping



Finally, I reviewed themes, associated them with the questions addressed in this study, and developed the analytical narrative. To maintain rigor throughout the process, criteria for quality of thematic analysis established by Braun and Clarke (2006) were also adopted. These criteria include internal consistency and accuracy, as well as alignment with epistemological position.

Ethical Considerations

Participation was voluntary, and, prior to the beginning of data collection, participants were asked to sign a consent form that described the research procedures, as well as their rights

throughout the research process. Identifiable data instances were removed from research materials and participants were attributed pseudonyms to which they are referred to in reports, presentations, and any other type of public material.

It is also important to consider ethical concerns in the qualitative data analysis process that stem from the researcher's subjectivities (Peshkin, 1998). For this reason, member checking (Patton, 2014) was adopted in the study to establish validity and credibility of analysis and keep in check possible biases regarding my positive previous experiences with digital games as instructional tool.

Results

This section presents the results of the study, organizing the themes derived from thematic analysis (Braun & Clarke, 2006) within sub-sections that relate to each research question. In order to aid understanding of the procedural nature of moral decision-making (Rest, 1982), the organization of themes also reflects considerations that relate to the experience of game play in a chronological order. Following this analysis, the theory of moral decision-making processes in game play that was derived from data (Cobb, Confrey, Lehrer, et al., 2003) is presented as part of the discussion of results.

How Do Learners Make Moral Decisions Within a Single Player Game-Based Scenario Simulating a Governmental Setting?

Experimentation of Game Controls is an Initial Part of the Play Experience

Although this consideration does not relate particularly to moral decision-making, it is important to address that participants demonstrated different levels of familiarity with the game format]

Consequently, Serena and Alana, being less familiar with this type of game narrative and controls, demonstrated difficulty when navigating the game environment at the beginning of the play experience. Video data indicated that these participants struggled with moving forward with the game commands, which initially slowed them down. Additionally, in the case of Serena, this issue led to a suspension of the “magic circle” (Huizinga, 1950) when the help of the researcher was needed in interpreting instructions for the first of the major decisions in the game.

Video games are developed taking into account already established systems and ways of play (Bateman, 2017). As a result, lack of prior experience with these practices can result in progression at a slower pace or confusion during game-based learning. These considerations are crucial for the implementation of games in classroom contexts, as familiarity with digital play genres can influence the degree of control, and even enjoyment, that participants demonstrate during the experience.

Figure 3.3

Instruction Prior To A Crucial Decision Point



Emotional and Procedural Variables Affect Individuals Differently

Participants in the study were affected in different ways regarding the storyline in which the game was contextualized and the recommended procedures for actions in governmental contexts. Alana and Serena's moral decision-making processes were influenced by the characters, and their decisions were grounded in their well-being in the simulated environment (Schmierbach & Limperos, 2013).

My decision-making process was based off the fact that his wife was sick, she was in the hospital, and he needed money because of the bills. So when it asked me like, to stay or to go to work, I'm like, need to go to work because we need money to pay for her bills
(Alana)

Meanwhile, Kyle adopted a binary morality (Barnett & Sharp, 2015) stance, trying to observe the rights and wrongs within the possible actions to succeed, in a certain manner, in the game.

I didn't engage as much with the story. (...) I was like, oh, what are the policies are doing this more as like a learning simulation. Or like (...) I see that this is probably the right choice within the context of this as an activity. (Kyle)

These distinct interpretations of the moral situation at hand (Rest, 1982) guided participants' decisions. Such stances can be compared to previous literature on moral decision-making that identified factors that lead to specific moral actions within games. Alana and Serena's experience is aligned with previous findings that indicate that females express more empathy and interest in interactions with virtual characters than their male counterparts (Bachen, Hernández-Ramos, & Raphael, 2012). Furthermore, another variable of interest here is game

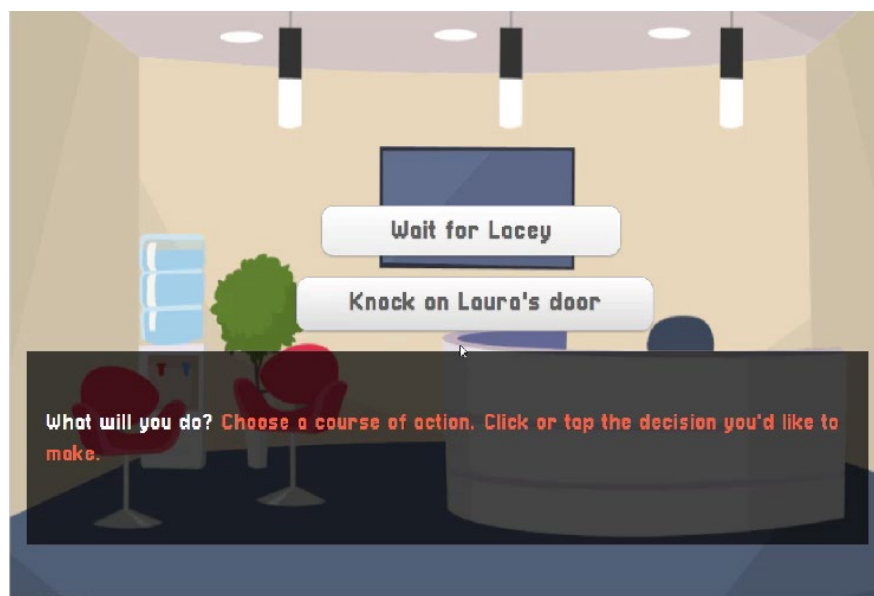
play experience: when surveyed prior to the intervention, Kyle declared being a seasoned gamer, while Alana and Serena expressed having less frequent gaming habits. Gaming practice may also have influenced Kyle's interpretation of moral situations.

I guess I was meta gaming, a little, thinking (...) what are my likely outcomes in this game? (Kyle)

This behavior extended not only to the decisions who were purposefully designed to be moral, but also in simpler social cues; for instance, Kyle demonstrated hesitation, looking for a "correct" course of action even when faced with the two choices represented below (Figure 3.4).

Figure 3.4

One Of The Decision Points In The Game



As indicated by Klimmt, Schmid, Nosper, Hartmann, & Vorderer (2006), more experienced gamers may approach morality in games and in real life differently, separating their virtual moral behavior to how they might act in real life, thus detaching themselves morally from

in-game decision-making. That seems to be particularly evident in violent games (Klimmt et al., 2006), but Kyle's stance may suggest that this perspective extends to other game contexts.

Game Play Process Included Constant Comparison with Real Work Setting

In addition to the emotional and procedural variables, a process of comparison and contrast between the game setting and a possible real-world situation in which such narrative could be embedded was another important factor in participants' interpretation of the situation and decision on possible moral courses of action (Rest, 1982). This process was observed in contrasting ways by participants, benefitting Alana, a more experienced worker, and causing confusion and frustration for Kyle and Serena.

When confronting the chairwoman in the game about her decision to favor her nephew, Alana drew on her personal experience to request documentation of such decision, intending to exempt herself from responsibility related to the unethical behavior observed.

I asked for her to put that in writing. Because just coming from the corporate world, you're used to asking for proof to cover your backside (...) Well, why did you hire this person based on no experience? Well, I spoke with her privately. And then she sent me an email saying she didn't care. That he was still getting hired. So I asked for that in writing (Alana)

For Serena and Kyle, however, drawing on personal experience or real-like interpretation of the game situation led to confusion related to length of a real hiring process. As a consequence, Serena's moral decision-making, for instance, was disrupted by game constraints (Gredler, 2004; Sicart, 2013) and indicated a mismatch between the designer's intentions and her reasoning. This negative reaction as a result of the process of comparison to a real-life setting

was evident when Serena expressed the understanding that more time would be dedicated to decision-making and ultimately for the hiring process to be finalized:

I think one of the reasons I didn't escalate to the mayor was because I thought I'd last longer. I didn't realize it was just going to be a day. And even though they talked about what happened afterwards (...) now you've talked to them, there it was, you either had to tell them *the day of* or you just let it go, which I thought was a little bit weird (Serena)

Theorizations regarding identities in game play indicate that this confusion can relate to a mismatch between real and virtual identities enacted by players (Gee, 2003). Especially in an educational game that simulates a real setting, the issue of identity, as portrayed by Serena's and Kyle's negative reactions, grows even more complex, as the separation of real and virtual action is blurred. As a result, the projective identity (Gee, 2003) that arose from the play experience did not correspond entirely to player's intentions due to conflicting interpretations of possible outcomes and barriers to implementation of actions.

Decision and Execution of Actions Included Reflection on Possible Personal and Social Outcomes

After initially interpreting moral situations, participants took into consideration possible ramifications of their decisions within the game context. In this process, particularly relevance was placed on consequences of the playable and non-playable characters (Schmierbach & Limperos, 2013). Serena described how caring for the characters influenced her decisions:

I think also like, decisions later on, you didn't want to make too many waves, because you did have those medical bills to pay. So like, even though I know that made me a little more hesitant about going to the mayor (Serena)

For Serena and Alana, the consideration of such outcomes was central to the game experience. Alana describes caring for the main character's wife in the first decision prompt of the game:

I don't need to stay at home, if we got to make money, get you to feeling better, you know, if you pull through this, we got to be able to eat the next day. (Alana)

Furthermore, for Kyle, job safety was a more pressing concern, even though the storyline and its emotional appeal also had certain influence. Individual factors were, thus, a higher priority.

I did take my wife's decision into consideration, or my wife's condition into consideration. But like I said, I also kind of felt like, I could also lose my job for breaking policy. (Kyle)

Concerns for both playable and non-playable characters were evident in participants' experiences, aligning with previous literature that indicates their importance in the design of moral games (Schrier, 2015). Embedding moral actions in a simulated context was observed to heighten participants' sense of responsibility, as decisions could have unforeseen implications for the actors involved in the situation (Siyahhan, Barab, & James, 2011).

Limited In-Game Decisions Constrained Real-Like Decision-Making

Although, for participants, the game allowed for moral reflection and constant monitoring of one's actions, the design presented limitations as participants ventured to implement their decisions. Lack of exploration and cut and dried decisions were considered a negative factor for immersion and authenticity in the last step of the moral decision-making process. Serena discusses, for instance, the lack of further options for confrontation within the game that resulted

in negative reactions from the playable character (*“You never actually say no, I’m not going to hire him” - Serena*).

Moreover, the presentation of the game, according to Kyle, influenced players to implement decisions in a specific direction:

I think that there was a little like pressure, like, in the game, to make the ethical choice.

Whereas like, in real life, I think I would have at least I would have been, I don't know, if

I would have the same decision, I probably would have been a lot more conflicted (Kyle)

Not only did the game constrain player’s freedom and choices, but also the very idea of implementing moral decision-making within a game itself. Although digital games have been argued to be environments where players can enact agency in performing authentic tasks and making life-like decisions (Siyahhan et al., 2011), they are still constrained to the designed space. In the virtual, there is a finite number of possible actions, which might influence their ability to act within their will, including while making moral choices (Bartel, 2015).

I guess I thought, maybe if he actually... he might not have the right experience. But if you're forced to do it, and if it does work hard, then what's the point? (Serena)

This discussion and related participant feedback are valuable contributors for further design of the game that will capture nuanced decision-making in a more effective fashion.

What Is (If Any) The Role Of Empathy In Learners' Decision-Making Within The Game?

Pre-Game Dispositions Shape the Decision-Making Process and Empathy

The way participants initially approached the game influenced their disposition for feelings of empathy towards characters in the game. Alana and Serena adopted a perspective that considered the game as a reflection of a real context, increasing the possibility that they would

relate to characters as relatable entities. The excerpt below illustrates Alana's point of view while making decisions in the game:

I'm just thinking, like, if this is a simulation and supposed to be as close to real life as possible. When we make decisions in real life, we don't know what the outcome is, you know, we don't know what the next steps are, we don't know if we're hitting the end, or there's going to be several more steps beyond that point. So to me, I was doing it from an aspect of I don't know what's next or what the following steps are, but I'll just approach it as I see fit (Alana)

As discussed previously, Kyle, however, approached the game from the perspective of a simulation or training, a space for experimentation with rules that can be applied to real contexts (Rieber, 1996). Therefore, his decisions were influenced more by the policies and social norms that ruled the virtual workplace than by character's and the possible consequences of moral actions.

These data provide insights into what moral dispositions participants rely on when making decisions. While Serena and Alana prioritized processes of sensitivity, valuing emotional expressions and adopting perspective-taking (Narvaez & Lapsley, 2005), Kyle used predominantly judgment-related processes, such as adopting objective reasoning and looking for *right* choices. The differences identified here can likely translated to a myriad of moral perspectives to be encountered in classroom contexts, which might influence how learners demonstrate empathy for virtual characters.

Consequences for Characters Can Impact Players' Choices

All participants, although Kyle to a lesser extent, described potential ramifications of their decisions to characters' well-being as a factor that influenced their moral choices. Notable in this process was the emphasis on the importance of monitoring oneself so that potentially negative consequences were kept to a minimum, as evidenced by Serena's reasoning:

I think also like, decisions later on, you didn't want to make too many waves, because you did have those medical bills to pay. So like (...) that made me a little more hesitant about going to the mayor (Serena)

The participant's position considered, in the excerpt above, how the main character's wife could be affected by the decisions she made during the game experience. That said, virtual characters, playable or otherwise, were effective in influencing learners' moral reasoning, which aligns with recent models and empirical data that examine the relationship between morality and game play (e.g. Katsarov et al., 2019; Ryan, Staines, & Formosa, 2017; Schrier, 2015, 2019; Sicart, 2013). These characters, inserted within an overarching narrative, helped the player in developing a moral profile within the game world.

Discussion

Analysis of the game play experiences and focus group data with three participants, namely Alana, Kyle, and Serena, indicated that Rest's (1982) moral decision-making process theorizations were suitable for interpreting how learners make morally laden choices within a game context. This process is permeated by several variables, such as learners' dispositions towards the game, familiarity with the game genre, and experiences with the environment and

situations simulated in the game. Figure 3.5 below illustrates how moral decision-making process was observed within the Internal Controls game through the perspective of participants.

Figure 3.5

Moral Decision-Making Process In The Internal Controls Game.



Initial Attitudes and Interpretations of the Game Environment

Stances adopted by players prior and during the start of a game-based learning experience influenced the approach adopted for moral decision-making. Such perspectives can be influenced by, for instance, gaming experience and gender factors (Greitemeyer et al., 2010; Klimmt et al., 2006). Furthermore, learners' perspectives of the game-based activity itself plays a role in the interpretation of the virtual space, as the insertion of a digital game in the classroom may lead them to perceive the virtual environment as a training simulation rather than a game (Rieber 1996). The interpretations generated by players in this stage are paramount for the moral decision-making processes that follow (Figure 3.5).

In-Game Reasoning and Interpretation

After adopting the lens through which the game is perceived, players translated their interpretations to possible in-game applications. This is the first step in which the virtual world plays a central role in learner's decision-making. Adopting a moral sensitivity stance (Narvaez &

Lapsley, 2005), for example, led Alana and Serena to interpret the virtual context as a real-like situation, whereas Kyle viewed the game as a challenge that should be won in a definite way, achieving an ideal outcome (Bartle, 1996). That said, this step takes the game interpretation a step further by introducing the understanding of the game's possibilities and constraints (Gredler, 2004) to learners' cognition. In-game reasoning and interpretation led to the observation of distinct approaches to decision-making, namely (a) one that focused on empathy-related concerns, in the case of Serena and Alana, and (b) one that focused on game rules and possible outcomes, in the case of Kyle.

Decisions on Moral Courses of Action

Initial attitudes to the game-based activity, followed by in-game interpretation, led to decision-making in the game space. Participants focused their decisions on their intentions, balancing prioritization of characters' well-being and the contextual rules that should be complied with according to their previously established foci (Katsarov et al., 2019; Narvaez & Lapsley, 2005). These decisions are negotiated with the game world, leading to the next and final step.

Implementation of Decisions

As limited actions are possible within the game-based context, players execute their moral decisions based on the established and understood constraints of the virtual space. This final step is a crucial one and the most noticeable for participants, as the decisions implemented might not be a direct translation of their desired choices due to the limitations of the tool. As a result, the game world is prioritized in this final step.

The understanding of this process, although by no means conclusive through the analysis of this limited number of participants, can provide insights into learners' dispositions to game-based instructional practices and suggest educational approaches that may foster their understanding of their own (and others') moral decision-making. That said, some implications of this study for classroom practice are presented next.

Implications for Instruction

Analysis of the moral decision-making process during play in this study indicated that participants start the game experience with previous assumptions about virtual worlds. Particularly valuable for learners' own identification of moral stances was a process of comparison and contrast of decisions and outcomes with other participants in the focus group session. I theorize, thus, that in a classroom context, the use of a game to help learners understand their morality can benefit from interaction with other students. Discussing moral decisions can help individuals in identifying where their morality stands in comparison to others considering the social understanding of games, the socio-historical context of the classroom, their prior knowledge and experiences, and the constraints of the virtual environment.

This potential post-play discussion, as well as the process of play itself, can benefit by mediation from the instructor (Moon, 2004). Teachers can, for instance, offer reflection questions that address learners' moral decision-making processes through the game and inquire why such choices were made. When carried out in a classroom context, such discussion helps learners in identifying alternative moral perspectives among their colleagues. In this potential post-play intervention, teachers take on the role of facilitators (Hafner & Miller, 2011) that assist students in recognizing their values and agency. This approach can help students in reflecting

while making moral decisions when faced with situations such as the one presented in the game in a real work context.

Final Considerations

This article, framed as an exploratory first iteration of a design-based research study (Amiel & Reeves 2008; Barab & Squire, 2004), aimed at investigating the process of adult learners' moral decision-making with a game-based narrative and developing a context-based, humble theory (Cobb et al., 2003) on moral decision-making processes in game environments. The theory derived from data analysis of game play experiences of three prospective government workers includes a process that correspond to previous conceptualizations of moral decision-making (Narvaez & Lapsley, 2005; Rest, 1982), including other learner-specific variables, such as dispositions for empathy and exploration of the story and the need to “win” the game (Bartle, 1996). Participant experience also sheds light into possible instructional strategies, such as student-centered, teacher-mediated discussions post-game play (Moon, 2004) that foster reflection on in-game decisions and allows learners to compare their processes to others'.

This investigation is not without its limitations. First, although the small number of participants allowed the analysis to reach a rich description of learners' moral decision-making processes, further investigations are needed to identify with more accuracy specific factors, either design or student-related, that lead to learners' moral interpretations and actions during game play. Moreover, since this study was conducted in a controlled setting (Kessler & Vesterlund, 2015), the process, as well as considerations for instruction suggested in the discussion, needs to be validated in authentic, complex instructional environments (Brown,

1992). The arguments presented here offer, however, a start point in understanding how learners' moral decision-making awareness can be fostered in instructional contexts.

Finally, the preliminary results of this investigation also indicate potential areas for further studies. Moral decision-making processes could be analyzed taking into consideration learner creativity and observing, for instance, the role of cognitive entrenchment (Dane, 2010) during game-based learning activities focused on decision-making. Furthermore, studies could expand on the present discussion by considering possible forms of assessment of moral decision-making for different instructional purposes.

Ethical Statement

The author certifies that no conflicts of interest were observed throughout the study, including data collection and analytical procedures. Open data is not available for this study to safeguard participants' identities. This research project was approved by the author's university Institutional Review Board.

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APPENDIX A

Focus Group Guided Questions

Question #1

Please describe your decision-making process within the Internal Controls game. What factors did you take into consideration when making your decisions? How difficult was it to make decisions within the game?

Question #2

Discuss the outcomes of your gameplay experience. What was the outcome of your gameplay experience? How do you feel about these outcomes? If you played the game again, what would you do differently (if anything)?

Question #3

Reflect on the role of the storyline and the main character's background in the game. How much did you take into consideration the information provided about the main character when making your decisions, and why?

Question #4

Reflect on the attitude you took when playing the game. How similar, or differently, do you think you would react when dealing with a similar situation in a real context?

Question #5

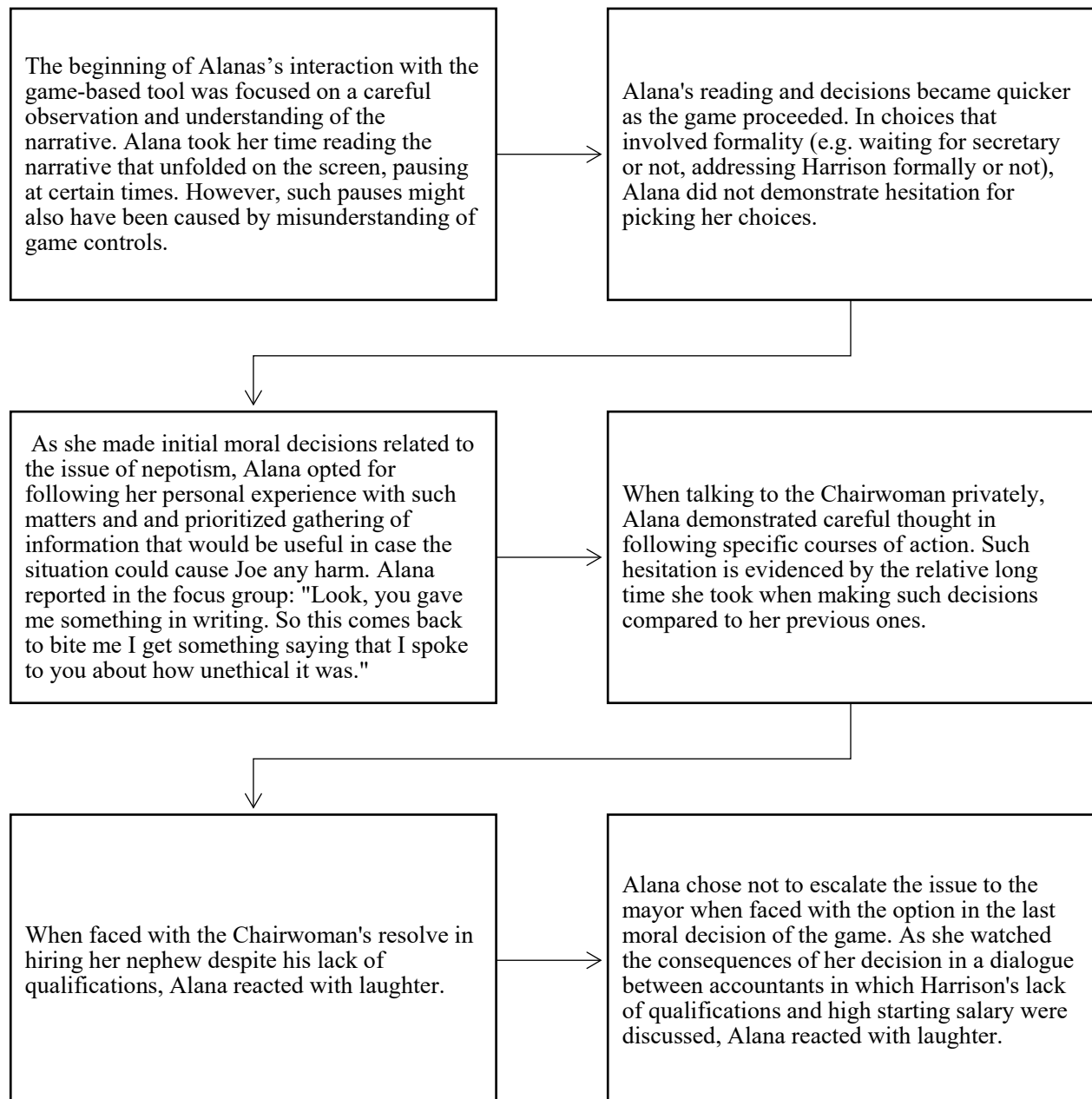
What did you learn (if anything) about your moral decision-making process by playing this game and discussing it with others?

Question #6

Please provide feedback on the game used for this experience. What did you like about it? What did you dislike about it? How would you change it, and why? Some areas that can be addressed are: game controls; game story; game instructions; game outcomes; player control; accessibility.

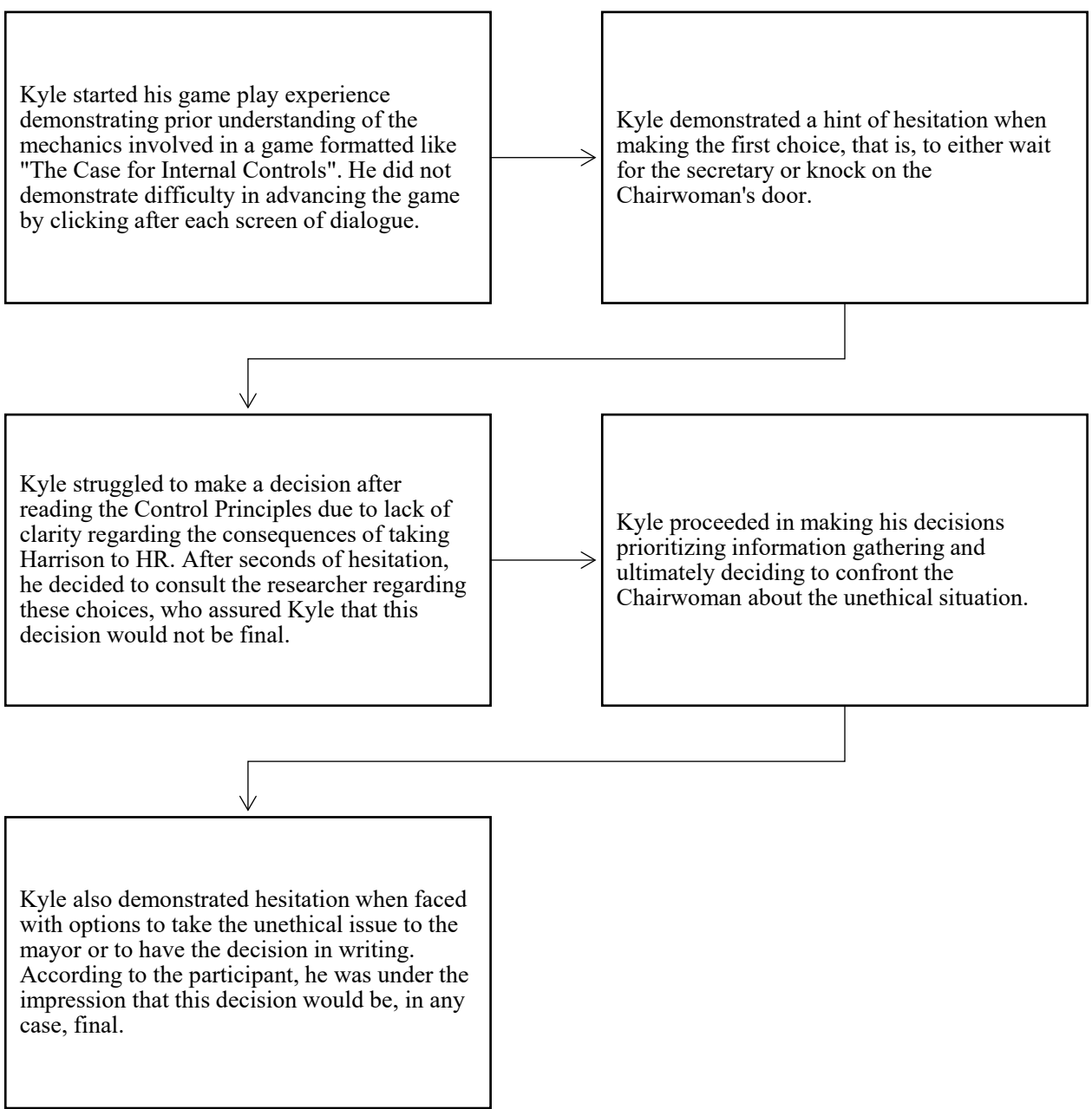
APPENDIX B

Narrative Map – Alana



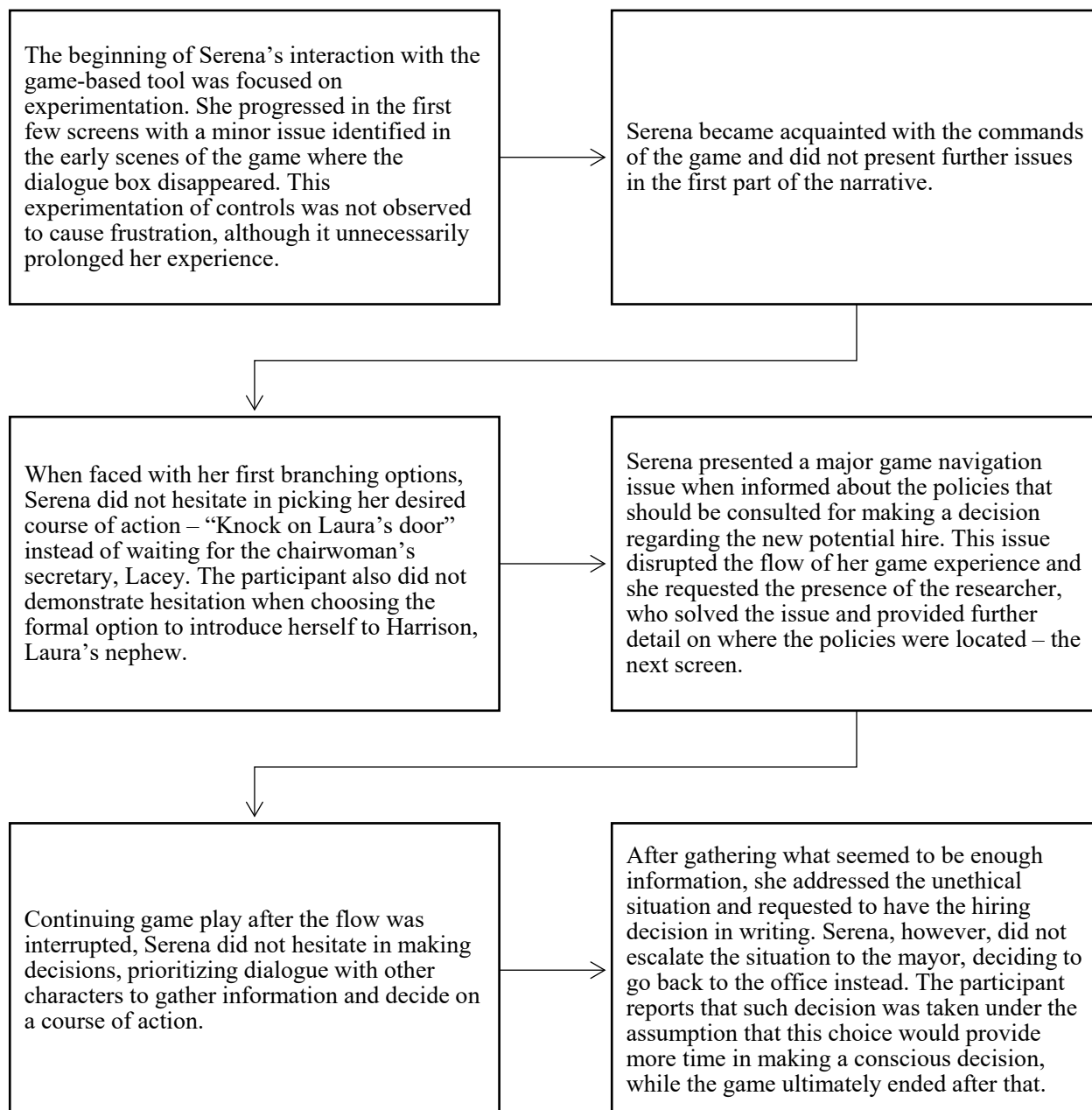
APPENDIX C

Narrative Map – Kyle



APPENDIX D

Narrative Map – Serena



APPENDIX E

Focus Group Session Transcript

Focus Group Participants: Serena, Alana, and Kyle

Date: 4/26/2019

Interviewer: Rafael Leonardo da Silva (Researcher)

RESEARCHER: Let's make sure it's recording, just put the phone in a place that it can hear all of us. And my voice isn't, isn't usually this loud. So I'm trying to do my best here. So the way that I'm that I'm planning to this, I'm going to address the question and whoever feels free to start responding can do so. So please describe your decision-making process within the internal controls game. What factors did you take into consideration when making your decisions? And how difficult was it to make decisions within the game?

ALANA: Well, for me, I'll start. My decision-making process was based off the fact that his wife was sick, she was in the hospital, and he needed money because of the bills. So when it asked me like, to stay or to go to work, I'm like, need to go to work because we need money to pay for her bills, or whatever. And so I wrote down my process, because I wouldn't remember. So we went to work. And then we were faced by the Councilwoman. And so I read the policies to make sure like, it was nothing in there saying that we couldn't hire family or friends or something like that,

which I did not identify the policies. And so my next thing was, okay, we asked him about his job experience, because I'm okay with somebody referring a person to me, you know, if I'm in a position to hire, but let me see what your qualifications are. And so I asked about the job experience. And then I talked with the councilwoman privately about how I felt that there was an unethical decision, because he had no experience. And she insisted that he was being hired anyway. So I asked for her to put that in writing. Because just coming from the corporate world, you're used to asking for proof to cover your backside, if it comes up like, Well, why did you hire this person based on no experience? Well, I spoke with her privately. And then she sent me an email saying, she didn't care. That he was still getting hired. So I asked for that in writing, and then I didn't escalate it to the mayor. I went back to my office, because I just felt that I had had proof that I'd spoken to her, and she insisted on hiring her nephew

R: You're cleaning, your

A: Yeah, so in my mind, I've done my due diligence. Yeah, that was my thought process.

SERENA: I basically had the same thought process. But I think one of the reasons I didn't escalate to the mayor was because I thought I'd last longer. I didn't realize it was just going to be a day. And even though they talked about what happened afterwards, there was no like, now you've talked to them there it was, you either had to tell them the day of or you just let it go, which I thought was a little bit weird. Because I mean, I was kind of expecting that [inaudible] to be like, okay, maybe like when she's putting in writing. And she said, maybe this isn't a good idea. Because like, if you have someone put something in writing, you're like, That's weird. Yes, you should, you should be like, maybe I'm not doing something right. I'm writing. Okay. So.

KYLE: it's interesting, I had, I had a different thought process. So I kind of must have missed that you could read the policies. So I don't know, I didn't know they were on there.

A: So if you read the bottom, it said, if you would like to read the policies, click or hit the spacebar. So anything, he wanted to minimize that there were instructions, that he wanted to minimize the instructions hit the spacebar a second time.

R: So depending on what you chose, during the game, it would show you some [Oh], I'll show you the policies. Okay, so. So, just explaining a little bit of the design just as a parenthesis, depending on your choices, you had different, you had different outcomes. So, so the policies might not, might not have shown to you because you had a different you chose, you chose different options, but, but go on, what was your

K: That's interesting, I knew that my wife was sick, like in the game. But I had a different decision-making process. Like once I started talking to the council woman, all because well, first of all, I really, I was like, you know, this is a terrible situation. But if this ship sinks, we're all going down with it, myself included as the finance director. So because this is not only unethical, but this is something like that probably could get me fired. So, you know, I figured, you know, as a councilwoman, I don't think she can fire me. Like, I think she actually doesn't have, like hiring or firing power. [Right.] So, you know, I was just thinking that, so I was like, I'll escalate to the mayor. But I didn't get it in writing. So she asked me for proof, and I was like, Oh, I don't have any proof. So I actually ended up escalating and then looking bad. [Right.] So um, yeah, I guess that was. That was, that was an interesting one.

A: Oh, that's interesting to hear that that's the route that it took you escalate it. They wanted something in writing.

K: Yeah, I don't. Maybe I don't know if there was an option. Was there an option to escalate after you got it in writing?

S: Yes

R: Yes.

K: Oh.

R: Yeah. So this is this is why this is one of the reasons why I really wanted to have you guys sit down and just compare it because [Alana], you talked about your decision-making process and how it relates to your professional life. And you coming in, I feel like from a more academic perspective, [yeah] you're, you know, you didn't, you focused more on the process and not on the social aspects of... Interesting. So discuss the outcomes of your gameplay experience. So we've already discussed a little bit about this. But let's talk a little bit more about this. What was the outcome of your gameplay experience? How do you feel about these outcomes? So what happened in the end for you? And if you played the game again, what would you do differently?

S: So the ending I got is he got, like 60K in salary, which was higher than everyone else. He wasn't doing anything. And then just people in the office were really, really, like, annoyed by the whole entire process. And I think if I redid it, I would have escalated to the mayor after I got it in writing. Because I was expecting, I don't know, I guess I was just expecting it to last longer than a day. So I just didn't want to escalate that day itself. But I guess it makes sense, like act on as soon as you can.

R: So you feel like there should be an option to... to have that that option of bringing it to the mayor.

S: Well, the thing is like, even though he didn't have an experience, like, I don't know, I guess I thought, maybe if he actually, he might not have the right experience. But if you're forced to do it, and if it does work hard, then what's the point? But if he doesn't, then that's why you have that letter, you can be like, okay, like I gave him the chance he's not working, he's not doing anything he should, he should be immediately fired. So.

A: Yeah, and if I played it again, I think I was presented with the option of taking him straight to HR and let him go through the hiring process. That way, I would have done that. And then it's off my back. Because I'm not saying whether or not I'm hiring, and whatnot, I'm going to send him to HR and if they think that he's qualified...

S: But it did say that HR let them go through no problem.

A: Did it say that?

R: It goes, that's a, that's also, a different route. So just also as a parenthesis to explain this part of the design, if you choose the option of going through HR, the chairwoman just says, well, never mind that, we we've already done that. And so

A: I chose to, I guess the, asked about the job experiences and things of that nature, but I think I would have escalated it to the mayor once I got it in writing. Because that was my next option, once I asked for it and writing it says go to the office or, you know, take it to the mayor. And I just chose to go to the office. And I didn't escalate it. Once again, like, I guess my thought processes is to like, I'll never try to get anybody in trouble at work. You know, I'm like, Look, you gave me something in writing. So this comes back to bite me I get something saying that I spoke to you about how unethical it was. And yeah,

R: So just to make sure you were saying that you wouldn't want to put yourself in trouble. And then

A: I just don't want to get anybody else in trouble. But then I felt like I covered myself because I got it in writing. And I'm not necessarily trying to snitch on you. And you know, get you in trouble. You already gave me something in writing. And so this come back up, I already got something saying that I'm okay. [Yeah.] And that you are unethical, and that you wanted to get your nephew in the door anyway. Right? [Yeah.] So I felt like I was, I was safe. But looking in hindsight, I would have taken it to the mayor, just to see, you know, how the game would be.

K: So I think the only thing that is that, you know, when it says like, get it in writing or go to the mayor. And the only thing I thought was that, like, if I got it in writing, I couldn't go to the mayor. So that was just one thing that like, it was slightly confusing to me. Because I was like, worried that if I got it in writing, I would just accept the decision. I didn't want to accept it. So that was one thing that like was like, oh, shoot, now I'm at the mayor. And I could have gotten this in writing. So I guess the hindsight is 20 20. So I don't know.

R: Yes, I'm so I'm hearing that this decision should be more open ended. And you should be aware of the decisions. For example, [Serena] said that you should have that option to take it to the mayor afterwards, as well. You should know from the start that you can, you can take it, you can take this,

S: I don't think you need to do a full trade. But I think if we know like the number of questions going through that could kind of help us to know like, Okay, this is going to be the end of the game, some of the decisions we make probably are way more impactful than...

A: Or like, I'm just thinking, like, if this is a simulation and supposed to be as close to real life as possible. When we make decisions in real life, we don't know what the outcome is, you know, we don't know what the next steps are, we don't know if we're hitting the end, or there's going to be several more steps beyond that point. So to me, I was doing it from an aspect of I don't know what's next or what the following steps are, but I'll just approach it as I see fit. Because, you know, working here, you will do something now and you don't know that's going to be the end of it. Or if it's going to be a whole week worth of...

S: Uhm, is this game supposed to be like a training game or like a preliminary...

R: So, we're going to we're going to use it within an Internal Controls Course. So this is part of the [Organization's] Certificate Program. [Okay]. We already have the innovations that you're aware of. And we're, this research project is just understanding it from, from a more interactive perspective. Uhm, Any other considerations regarding this question?

K: That's a really interesting point that you're like, you [INAUDIBLE] more of a simulation. Because I kind of, I guess I was meta gaming, a little, thinking like, okay, what are my likely outcomes in this game? So I was thinking that too, so. But there were like, a lot of options. So I really could have approached it in more of a simulation.

R: When you talk about what are your likely outcomes? What would you, what did you think? For the likely outcomes?

K: For what? Which for [for the for the game itself?] Oh, like within the game? Yeah. Oh, I thought if I got it in writing the game would end there. [Okay.] Yeah. So I did I just had this perception. I don't know why I told you that. But I just was like, if I get it in writing, it's like, over and he's hired. I had this perception. I don't. I don't know why I thought that. Yeah.

R: So going on to the next question, reflect on the role of the storyline and the main character's background in the game. How much did you take into consideration the information provided about the main character when making your decisions, and why? [Alana] already said, you were saying

A: That the wife was sick. And I knew that the medical bills were piling up, I think that's what the storyline said. And they were in a hospital like, or maybe at the house. And I was like, Oh, you need to go to work. Because I think my first option was it like to go to work or stay at home with her. I don't need to stay at home, if we got to make money, get you to feeling better, you know, if you pull through this, we got to be able to eat the next day. So as much as I want to stay here with you, I got to go make a dime. And that's how I looked at it.

S: Yeah. And I think also like, decisions later on, you didn't want to make too many waves, because you did have those medical bills to pay. So like, even though I know that made me a little more hesitant about going to the mayor, because if you lose this job, then you're kind of [INAUDIBLE].

R: So you thought that that could be a consequence of escalating?

S: Yeah, but I think it was a good pressure to have for a simulation, because otherwise, then, like, it was good in just making sure the characters actually were a little more founded on stuff. So I mean, I thought it was good that you had that background, you have, you had that knowing like, he definitely needed this money, and he had the experience. But he's also stressed out he can be focused on 10 things at once. And like supervising the nephew, like that's not really an option. Right?

R: You think along the same lines?

K: I guess I didn't. I guess I felt a bit more. I guess I felt a little more social pressure in the game. Like to act like, within policy. [Right.] So I guess I didn't engage as much with the story. So as much as y'all did. Like, it seems like I think that I was like, oh, what are the policies are doing this more as like a learning simulation. Or like, okay, like, I see that this is probably the right choice within the context of this as an activity. So I guess like, I don't know, I guess I wasn't as engaging. But you know, I don't know.

R: Why, is there any, anything that you would relate to that attitude? Why would you say that?

K: I'm not sure, I guess because like, I was approaching it somewhat from a context that it is a training simulation. Yeah. So like, so perhaps that I'm just like, maybe that was something. But I did take my wife's decision into consideration, or my wife's condition into consideration. But like I said, I also kind of felt like, I could also lose my lose my job for breaking policy. [Right]

A: Which will also mean, you guys don't have money to pay the medical bills. So he still kept the storyline in perspective.

K: That's true.

R: Right. So just seeing kind of two different ways into the storyline and policies, how much would you say that you took into consideration the policies more than the storyline itself? Or how, what was the balance between the pressures?

S: I mean, I definitely looked at the policy more like, besides the wife being sick, like, that's really all that you got from there. So it just honestly just gave you that, the bounded like, that you can't just quit and be like, leave all this. But I think the policies really helps like just direct stories, because, like you I look through, and I was like, Okay, is there anything that says I can't hire family, and there wasn't. When you're looking through the policies themselves too, I

thought, I mean, there were a little too easy to read, which is my only complaint about it, because I thought like, if you're going to do a training simulation, you need to have it a little bit more formalized. But that was good, because I feel like it would be kind of interesting to see, having like more like a traditional like policy where a little more like, there's a little more jargon on it, and then you have to be able to spot it yourself. Right? Yeah, put that out. Because I feel like that would make it better.

A: And most of us are like, you can't report, can't work underneath, like a family member or something like if you work in the same place. But you can't directly report to your family member if your family members like above you in any way. You can't get higher. And it's some type of jargon. Like you said, in in, in the policy that there's that, but yeah, like you said, you have to sit there and decipher life. Yeah.

K: That's so true for real life policies. They never are clear. It's always like, you cannot serve under a family member of direct relation or of second or third step relation or... [INAUDIBLE]

S: Yeah, so 'cause like I honestly didn't think until [Kyle] mentioned, but like, the chairman, woman can't fire us, like I didn't. I just didn't think of that. Yeah. So I thought, because usually you're, any kind of like employee handbook will usually have like, a little bit of the structure. So I think that would be interesting to see, too.

R: Yeah. I think that when the things like [Alana] said, if the ship's going down, you're going with it. [Yeah.] And if you don't excuse yourself, or this is this, is very true. The picture of the policies that I that I displayed are from the instructional material that we have in the Internal Controls. So that's why it's a little bit easier to read than actual, real-world policy, but right. I feel like there's a need for a balance, there has to be, has to be a little more difficult. So reflect on the

attitude you took when playing the game, how similar or differently do you think you would react +when dealing with a similar situation? In a real context? I think

K: I would have reacted differently. Honestly. I'm just, I mean, I've never been in a situation like that. So I guess I can't really say, but, you know, I think that I don't know, I think I would have had a lot more pressure from this. Like, if, if I was in a real-life situation to not say something to the councilwoman, because my wife would be sick. And I think like, but so like, I think that there was a little like pressure, like, in the game to make the ethical choice. Whereas like, in real life, I think I would have at least I would have been, I don't know, if I would have the same decision, I probably would have been a lot more conflicted. And I probably would have taken like, at least like, a couple days to think about it. [Right], you know, or a week, like, but so I think that's only one thing. And you know, I don't know, like sometimes I approach games from like a meta perspective, rather than so I don't know,

A: I think I would approach it the exact same way. Because when I went through the game, I was thinking realistically, like, realistically, this is what we need to do. What would I do in this situation at [the organization] like... same? The same process that I would use, I think, in real life, I applied to the game.

S: I mean, I think I do similar process. But I'd also expect, like, usually you just don't hire someone there on the spot. [Right.] And so, I think it'd be cool. Like if you could sit and wait on that decision. So I think in like real life, you're going to set, you're going to talk to some people about like, and get advice before you make anything. Because even if it seems a little bit weird, you probably need to talk to your wife and be like, Hey, listen. Yeah, she seems really

reasonable because she's like, you can't stay, you got to go to work, right? So I feel like she would be the one being like, yeah, you should probably get that in writing

A: A spouse or like another coworker, if that guy went like, Chairwoman is asking me to hire her nephew, doesn't that sound weird. Like, yeah, what's your advice? And then, [INAUDIBLE] but have someone else kind of give them that, give him that feedback. Or advise them a little

S: Or like, talk to HR and be like, hey, she doesn't do that. Like, that's a little strange. Like, did she already put in paperwork to have him go through? [Right?] Because like, after you talk to you, like, he's all he's already been, like, fast tracked on HR. So I think it'd be interesting to talk to the HR manager and be like, so what did you think about that boy?

R: Now, just to address your comment, its, its complexity is part of it. If I want to create a game that is closer to what a real context and a real [uhum] look like that, that wouldn't have to take into consideration the waiting period, you know, just looking, just gathering feedback from other people. Not sure how it would work, but it's clearly something that I have to think about. Uhm, so going to the next question, and where we're going a little bit broader, and outside of the immediate context of the game, what did you learn if, if anything about your moral decision-making process by playing this game and just discussing it with others in this context?

A: Moral decision process.

S: I mean, I think I learned mine is similar to like other people's. And then it's more like, I because I already know, like, my decision-making process is more like just mitigate the fallout from everything and just make sure that you're okay, you're covered. And like that whole, that whole attitude also seems, it seems weird in the public sector context. But it does make more sense, because you're going to be like, I'm going to do the work I need to get done. And then I'm

going to make sure like, you don't want to cause too many waves. But you also don't want to make, you also want to be protected in case something happens. And you want to make sure that you can at least take, you can take the high ground and knowing your how to like, I did the best I could. And I'm not going to like stress way too much over it. So.

A: I agree with that. My moral decision making, like, um, what I realized is like, I'm not a shooting person, I say, Oh, yeah, you know, if you want a job, come on, in. And you know, you can start today, like, I really went through the due diligence of talking with her privately and asking him about his experience. And when I realized this is, like, a dead end, she was set on the fact that her nephew was going to start then asked for it in writing. So I do think that morally, I'm sound, I guess, in a corporate aspect.

K: Like I said, I felt like I needed to escalate. Because, you know, I guess I felt like, this guy is going to come in here, make more than everybody else, mess with our accounting. You know, now, we're not going to have a pay department, you know, who knows what payments will be missed? Right. So I guess I was thinking kind of like, that's like, not fair. But then again, because I jumped to talk to the mayor. I didn't really think practically, I was just thinking about the situation. So I was so like, I ended up looking back and not actually being successful in that. So I think there was like a little say, what

S: Did he still get hired?

K: Oh, I can't quite remember. I think like, the mayor was like, Do you have proof, and she's like, why would you just say that, but I'm not sure that he got hired because I think the councilwoman backed off. What happens in that scenario?

R: He still gets hired.

K: Oh, he still gets hired. Yeah. So I just ended up looking bad because I didn't strategize. So I guess I was thinking more about like, oh, what?

A: Let's nip it in the bud now

K: Yeah, let's nip it in the bud.

R: What's jumping up to me is the confrontational aspect, do you feel like in a real situation, you wouldn't be as confrontational as you were in that context?

K: Yes, but I'd be subtler about it. I think. Like, I don't think I'd go like barging into the mayor's office, like, card's on the table. But like, I think that if I was, if this was a real situation, and she was like, No, we're proceeding with this. Be more like, casually talking and appealing. You know, she hired her nephew. And he's been screwing up. What you think? What do you think about that? You know, slip it into conversation, and then let it be known or like, if I was meeting with another councilman, like, you know, they hired their nephew, I don't, I don't think that's a sustainable situation. Or keep tabs on his performance and be like, you missed this mark, you missed this mark, you missed this mark. Now you're fired. So I don't know, I guess that that would be the confrontational route.

A: Maybe if I would have saw what she put in writing, or how she worded it. Like how she, you know, if she, if I read it to have like, I'm the king, you know, I'm the queen around here. And this is what I'm, I'm determined is going to happen, then I probably would have escalated to the man, the mayor just depends on what her tone was in her, in her and her message in writing.

S: So it would be interesting just to see if she like, because when you, when you're talking, even though if you do like a little bit of disagreement on it. You never actually say no, I'm not going to hire him. So I think it'd be interesting if her message did like, you know, I talked to the

financial director, and he was open to the idea that, yeah, when you're asking questions, you do seem open, but it's not like you're right, interested in hiring him?

A: Did she say that? I pulled her aside and talked to her privately about the unethical decision and that I asked her nephew about the, his experience, and she's still determined that, yeah, it was okay to move forward. Like, what did you put in writing? So had I read that, it could have changed my outcome, my decision to go to the mayor or so

R: How confrontational you were depended on

A: Yeah, what did you put in writing? And how did word it?

K: [INAUDIBLE] fully competent nephew...

A: Because you're delusional

K: Willing to take a chance on a risk taker? [LAUGHTER]

A: Put in writing? Yeah, something totally different from what actually happened. I'm going to have to escalate you.

S: Yeah, that's a good point. And I feel like you could definitely do the same thing with the policies, because you can have an option to actually read the writing or not. And then I think that'd be also interesting to see, like, what route people take and say, they just like, okay, I have it in writing. I don't care [INAUDIBLE]

K: You know, but I have heard about stories, kind of stuff like this happened. And then like, everybody got fired. Like, I heard this interesting story from someone about how like, a county manager or Mayor something was taking like money to pay for conferences, but then double dipping their reimbursement with the state and the locality. And they like made everybody do it. And they made the CEO of the county or the county manager, sign off on. And my end, even

though it was like not his decision, to get double dipping, or do double dipping, he wasn't trying to tell the mayor like you shouldn't double dip. Well, one guy resigned over it and was like, fine, I'm just leaving the county, you know, but the other guy, double, like signed off on all these double dips, but he ended up going to jail, too

A: You just have to be able to stand your ground and say, like, as a financial officer, whatever, I don't agree with it.

R: Seems like it took more of a, have more of a direct experience with it. So you,

A: Yeah

R: Put that into it. So just, just the last question to finish, please provide feedback on the game used for this experience? What did you like about it? And what did you dislike about it? What would you change and why? So I just added some areas over here that you can, you can take into consideration when discussing this. I know that we already talked about this a little bit briefly in other questions, but if you have any more objective, or just any, anything that hasn't been addressed about this part

K: The only thing I would change is, when it says to get it in writing, I would just say get it in writing, and go to HR, get it in writing, go to the mayor, or something, or like get it in writing. Or just like an asterisk, like [this doesn't mean this is going to end], the game doesn't end here. Or maybe that's just too much of just a me perception thing

S: I think what would be fun to do is put an actual clock, right, putting a time to that. Because then if you know, like getting into writing, that's not going to end your day, because then they can see that clock. [It's only noon]. It's only noon, obviously you have to get through the entire day.

K: Oh, that's subtle. I like that.

A: It gets through to 5 o'clock.

S: And you can kind of tell like, okay, I can see like, probably when this is going to end? Like most likely, you're not going to have like five different decisions at 4:45. You could do like, the actual pressure,

R: Because you go back to your office, and then you can reflect on it. [Yeah.] Are you sure about what he did, do you want to do anything else other than that, that's, that's pretty good.

A: I like that idea.

K: That's real smart.

A: Yeah, I think everything else I address, like the options to read her, her letter that she put in writing. Yeah.

S: I also think, maybe doing like a toolbar where you can read those policies, just because the, the mechanism for reading those policies. It's a little bit clunky and harder to go for just like space and clicks. People just get used to clicking for stuff. So I think he would do it on that like, once they choose that option and pop up the toolbar, and then you can see the company policies, and then consider the employee policies and then maybe like an organizational chart, if they want to click on that. And then anything else they collect, they can see.

R: Right. So having a place where they can continuously check those instead of just at that time, in that context

S: And then other than that, I know my game stalled a little bit in the hospital. Because it just kept on taking me back to when I was first meeting the wife and then click and then you click.

And then it just keeps on stalling. Like two or three times. Yeah, I think it's just the [INAUDIBLE] of like

R: Yeah, we had started with, with [Alana], we also had a, it just started.

A: We had to go out and refresh

R: Yeah. It's technology. Yes. Something that I have to work on.

K: I have a curiosity, what platform did you make it in?

R: So I'm using a very low budget game development software called TyranoBuilder. I didn't want to use anything that is very robust. And that is very, you know, instructional. And instructional design, we use a lot of a software called Articulate Storyline, that's very corporate, that's very, you know, it has a subscription, it's very expensive, how the subscription, so I wanted to make a case that you can use something cheap, that's something that is actually interesting. And that can be used so that, you know, teachers out there can also do that and don't have to go through this whole process of let's, you know, spend \$500 and come in for a semester and the software and, not a lot of people have the money to do that. But that's I think that most of the things that we addressed in that discussion are pretty much doable. I think

K: I thought it looked nice and it felt good. So I did it. I thought the software was working really well for us

S: I thought overall it was really good, there's like a couple of things like, just user experiences. Maybe the music if there's like a toggle button for the music [LAUGHTER] then I know like when we, I just had an issue when I was trying to minimize it, I was expecting it to like, for minimize and go from a full screen to like, half a screen pop out. But it didn't. [Okay.] And I just I don't know when it happened for me, but I like was completely lost and stuff because it be cool

to see it like maybe when you want to minimize, it wouldn't be like it just be changing the screen. Pretty much like the user experience side.

R: It's pretty much necessary.

K: One thing I was wondering about, how often do y'all play digital games.

A: I play like, what is this digital games? Are you talking about like little fun games? I play this one game

R: Digital video games and just digital video games in general, like just game mechanics. I'm talking broadly about this,

A: Like PlayStation games,

R: Anything.

A: Okay, so I play every day I play like a little word game on my phone. I'll show you; it's called Wordscapes. Oh, yeah. Yeah, my boyfriend is like, oh, we're playing word games again tonight, like level 233. And you just sit there, and you pick the, so that's, I came from that perspective.

R: You actually play word game and not you know, metaphorical word games [LAUGHTER]

A: Like block game or some building that where you have to strategically place a block. But other than that, I don't know, like, I used to be a Sims person

S: I played like on my phone, I have like more simulations, and like just like the matching thing. But on my personal computer I play a lot more like storyline games. Like I have, I have Gone Home on my computer, I have Life is Strange. And then so I'm used to life that storyline thing and that's the kind of games I like, I can't do

R: It's a lot of my inspiration actually.

S: I can do like Mario Party, but I can't do like actually fighting games.

R: Yeah. I hope it doesn't get to a point where I have to create a fighting game for this

[LAUGHTER]

S: I play like, League of Legends, because my friends got me into that. I still don't get I just press the buttons. What is it? League of Legends?

K: Oh, that's a hard one.

S: It's really hard. There's a bunch of things happening at once. And they pretty much give me into it. So I was like I played a couple times. So I'm just pressing buttons that I'm like, I hope I'm killing something

A: My nephew [INAUDIBLE] play that Fortnite and I try, I try. And I'm like this is stupid. I was at this game is dumb, you get credit card and like, yeah, like Oh, you want to put it in the game, No.

S: I heard that the paid version is a lot different from the free version because the free versions is more battle royale kind of deal. The paid one actually has a storyline. It's like more like adventuring and going up. More like [INAUDIBLE]

K: I actually like that game. The building mechanic. It's real cool.

A: I saw it, I was like, build around, okay.

K: But it's like, it's more like you're playing like, chess with somebody because you've got to build, and you've got to out build them to get above them. So it like gets into like, really interesting, like, How fast can you build something? And can you build a structure that like, is strategic? I think that's really cool.

R: Yeah, it also gets into it, but for me, same as [INAUDIBLE]. I don't really, I can't do all of the, all that at the same time. So in terms of battle royale I play a lot of PUBG, which is just like

you're just shooting people. You don't have to build anything. If I have to build and shoot people, I get really lost [LAUGHTER]

S: Like, I know, it's more of like, I like having a more concrete storyline like *Breath of the Wild*. [That was a fantastic game], it was a lot of fun. I borrowed my friend's and I just played it like forever, I haven't finished it yet, though. But it's just I also just like pretty games. So.

K: That is one. It's just like, man, like the whole world is so gorgeous. And you can see the entire map, you know, the how they load that it's really interesting. They only load like the cone of your vision at any one time to not take up too much. So it's like little, when you turn it's actually loading different.

S: I'm going to show you pictures.

A: Yeah, I have no, no idea. We have like, we're in our mid-thirties. So everything that we think about is always like, oh remember the first Nintendo, so we have the first like, the original Nintendo and we play Mario. And the graphics are totally different from this Fortnite game when the kids come over, actually was like, oh, watch it to play this game. And they went to sleep on it. Like on a couch. They were sleep. I was like, Oh, so this is that boring for you guys? Yeah.

S: This is pretty much accurate. Oh, yeah. Oh, that's beautiful. Yeah, beautiful, gorgeous.

K: It feels like you're playing like a painting or like a digital painting.

R: Yeah, yeah.

S: Oh, and then I also like, what is that called, *Long Live the Queen*. If you play that game, it's a really good decision game. And so you're a princess, and you just survive until your 16th birthday, everything will kill you. But you have to build like knowledge base and everything. And you have to figure out and like, you have to play a couple different times, because like after

knowing it a little bit, and now on the 10th day, you can get bitten by a snake. And if you don't know how to like, survive, because poisons are like, have basic poison knowledge, you're going to die. That's why

A: Which is the simulation, I was telling you. I had research, I can't remember that the schools use, like elementary schools, and they are placing them in the science class, they're placing kids in a group, and they have to go into this world and help fight like diseases and things like that, like sample the soil. And so you might be the scientists, something like that. And they put them in there. And you know, you might be scientists, you might, you know, be you know, play a role or whatever. And we're all trying to determine what's killing the earth or etc., that and I was like, that's cool, because we didn't have that. And when I was coming up, and if I did, I think I would have probably been more into like, STEM type of learning.

R: Basically, you would you say that that would change or, you know, within your decisions

S: I mean, any kind of collaboration game is just really, usually really fun to do. And so that experience is always like, it just tends to be a more positive experience. Because I remember, the only time we've had something like that was like we went to the Space Museum in Alabama, I think it's in Huntington. But they had one where we are basically assigned roles. And like, I had one where I had to take care of plants and be the scientist for food and someone had to do like navigation. And like it was just really fun. Even though it's like fairly simple mechanics, we want to make sure our [INAUDIBLE] that whole, even though ours was a lot more physical than like, just actual games. Interesting. Interesting to see. And I don't think in internal control, we can do that. But like, any kind of like public administration, if you, since we have to collaborate so

much, it'd be kind of interesting to see a collaboration again, see, how will it work well with people

R: There are aspects of collaboration that you guys mentioned. So even getting feedback from, from others for actually making your decision. That's, that's one thing that I that I saw, I saw popping up a lot in conversation. Yeah. So I feel like that could be an aspect

K: What have you, I don't know if this is interesting. But what if you had like two or three people play the game at the time they had to debate while they play? It would be interesting.

A: So based off what [INAUDIBLE] your side, determines like, my next move

K: Like we'd have to come to like a consensus and, or vote

R: Yeah, you can play together in the same, the same screen

A: But this is going to be a training so

S: But it would also be kind of fun. If, if you did want to do more collaboration, like everyone who would be training would be the financial manager. But you could also have people play the other characters, right. Like you could be the Councilwoman, and you could change how insistent you're going to be, you know, you have

A: So you can select their character upfront.

S: I think that could be really interesting to see like a training one, because everyone would have to be the financial manager, but then like, the pressure you put could be a lot different. Because I think if the councilwoman was less direct, it wouldn't seem as big of a problem, right? Because then she'd be like, oh, like, my nephew was thinking about this, like, he's looking to change fields on stuff he has experienced, etc. And then that kind of priming would be like, okay, I'd be a little more open to doing that. It's going to give you some cues on how we look at learning.

Okay, let's see how you do for a week. If you mess up too much, then. Yeah, but I'm going to, I'll take a chance.

K: She could have been more strategic about it as well. [Yeah.] You know, like, Oh, you know, he doesn't know a lot. What? Well, why don't you hire him as a, you know, a temporary contractor, you know, he's good with software, you can get them on those Excel sheets, you know, and just see how it goes. But then like, Oh, you know, and then even if you come back next week and he really didn't do a great job. You know, he's learning, you know, why don't you just extend that one more week?

R: Yeah, I try to try to appeal to the classic "I don't know anything about this, but I'm willing to learn". Yeah, so that's the one thing

S: And I mean, that's the thing like, it's so true, because a lot of us, before we get good at stuff you just have to start from somewhere, right? And I think like, appealing more to our demographic, we would be more open if she wasn't as insistent, because we've all been in a place where like, I don't have any experience they're just going to take a chance on me, and I just can't mess this up.

K: So I think making him come into a higher pay grade, that's what really makes it... Like, if he came in at a low pay grade, like a trainee.

A: I think it's the same, people will still be offended if he came in at the same, Oh, he has no experience.

K: Oh, he's coming in lower, if he came in like a lot lower, in a training position or something.

S: But I don't think it mentions anywhere before we find out the pay grade, because I feel like if we knew that upfront then it'd be ways you'd be like, No, he's not

R: If you choose the HR option, they tell you that he's going to he's going to start with this salary

S: Yeah. And can you, can you

R: Then you have other options, taking the other options and having that in writing.

A: That's pretty cool though, the different functions that are, you know, different outcomes.

K: Because they told me like, when I played it, he would they turned and like he's going to come, and also at \$10,000 more, he was going to make 70,000 a year.

S: That's more than you probably made as a financial director.

K: Probably.

R: Well, thank you guys so much. This has been really, really helpful. I feel like even held you guys for more time that I promised that I would.

CHAPTER 4

“THERE’S NO WINNING, JUST DECISION-MAKING”: PROSPECTIVE AND CURRENT
GOVERNMENT WORKERS’ IDENTITY AND MORALITY IN SERIOUS GAME PLAY³

³ Rafael Leonardo da Silva. To be submitted to *Educational Technology Research and Development*.

ABSTRACT

This article presents the findings of the second iteration of a design-based study that aimed to investigate moral decision-making processes of prospective and current government workers in a serious visual novel game (Lee & Chia, 2015) designed following empirically based design conjectures (Sandoval, 2014). Data analyzed for this qualitative-focused (Denzin & Lincoln, 2005) study included narrative maps (Lapum, 2009) of three sessions of collective game play as well as semi-structured interviews with five participants. The results of theme analysis (Braun & Clarke, 2006) indicate that, during play, participants relied primarily on professional ethics and workplace-related policies to make moral decisions. The collective game play strategy adopted in the study design contributed to this stance as it led to an increased sense of accountability towards peers. Although participants empathized with the game characters' hardships, such feelings did not influence decision-making stances or actions. Finally, limitations of the visual novel game format were found to constrain nuanced decision-making.

Introduction

The increasing complexity of game-based environments has led researchers to observe game affordances for enacting relevant educational and personal skills. A skill that has garnered attention from researchers is moral decision-making (e.g. Heron & Belford, 2014; Schrier, 2019; Sicart, 2013). Narrative games, particularly, have been identified to present moral dilemmas that position players in complex situations that may reveal personal emotions and values. The use of a serious game (Squire, 2007) is, thus, hypothesized to be a valuable tool for raising learners' awareness of their own moral decision-making processes. Furthermore, instructional strategies, such as collective game play, may assist students in identifying peers' moral stances.

Taking this discussion into account, this study presents the second iteration of a qualitative-focused (Denzin & Lincoln, 2005) design-based research study (Barab & Squire, 2004) that investigates the moral decision-making processes of prospective and current government workers in a narrative game. The first iteration identified processes of moral decision-making enacted by participants individually (da Silva, 2021). This follow-up study focuses on the implementation of a second iteration of the game-based artifact with populations with varying levels of knowledge of the situation portrayed in the game in three separate group play sessions.

For this purpose, this paper is organized as follows. First, a review of literature is presented, briefly discussing game-based learning theories, moral decision-making in games, as well as a reflection on player identities in game interaction. The methods for the proposed intervention are then described. Analysis of results of these interventions is presented in the next section, along with a discussion that establishes connections between the findings of this study

and previous research. Lastly, I conclude the article with a summary of results, the limitations of this study, and recommendations for further research.

Review of the Literature

Game-based learning

Games are interactive media that can integrate development of specific skills within narrative spaces (Rieber, 1996). When games effectively demonstrate such integration, learner motivation for the task and self-regulated learning can be observed. However, Gee (2005) argues that these characteristics are not inherent to games. Instead, Gee (2005) presents the distinction of “good games,” tools that allow, for instance, for player agency, manipulation of variables and objects in a virtual environment, growing complexity of information and tasks, and meaningful, just-in-time feedback.

Learner agency, specifically, is a focal point of interest in this study. Games can allow players to act in a simulated environment and attribute meaning to in-game events. Agency is not only individual—learners can, in a game-based context, practice problem-solving collectively (Steinkuehler & Squire, 2009). As the focus on learner action is emphasized in this perspective of game-based learning, teachers mediate the relationship between student and content in game worlds rather than treat learners as recipients of information.

Researchers have recently shifted the focus from conceptual understandings of game-based learning (e.g. Gee, 2003; Gredler, 2004) to complex subject-specific studies. Relevant for this study are investigations focused on the comprehension and teaching of inquiry and problem-solving (Holbert & Wilensky, 2019) and ethics (Huang & Ho, 2018; Nadolny, Woolfrey, Pierlott, & Kahn, 2013; Schrier, 2017). Aligning with previous theorizations on game-based

learning, Holbert and Wilensky (2019) found that experimenting with the game environment led to player encouragement for scientific problem-solving. Furthermore, games-focused interventions were found to improve learners' ethical reasoning for workplace-related dilemmas (Huang & Ho, 2018) and scientific discussions (Nadolny et al., 2013). These examples indicate a promising area for investigation of learners' moral decision-making processes.

Moral decision-making in games

Researchers have increasingly explored the role of morality in game play (Schrier, 2017; Sicart, 2013; Staines, Formosa, & Ryan, 2019). Instead of allowing players to make decisions based on benefits that may arise from specific choices, that is, adopting a utilitarian perspective (Schulzke, 2010), moral situations can be framed as dilemmas in which outcomes are unclear and qualitatively different. Such dilemmas benefit from the variety of belief systems and emotions presented by the population of game players.

Within the wide landscape of games, narrative-focused games are the main catalysts for moral decision-making. By interacting with a game world where a story unfolds, players develop situated identities and build relationships with non-playable characters (NPC) (Schrier, 2019). Identity development and enactment influences players' decisions and potential outcomes. Players' reactions are influenced, for instance, by NPC's reactions to player agency (Schrier, 2019). Furthermore, ideologies or values promulgated by NPCs can also promote or discourage moral courses of action (Schmierbach & Limperos, 2013).

It is important to note, however, that discussions on the role of narratives in moral decision-making prioritize the use of commercial games rather than educational tools (Heron & Belford, 2014; Staines et al., 2019). This study, thus, presents a possibility of bridging the gap

between these discussions and potential observations of moral decision-making with serious games (Squire, 2007). In order to consider how these theorizations can align with learner profiles and instructional practices, a discussion on player identities is presented below.

Player identities and game-based instruction

Identities are, according to Holland, Lachicotte, Skinner, and Cain (1998), products of social contexts, perspectives that are developed when one acts in the world. Considering the social nature of identities, they are also fluid, mutable, and situation-driven, sometimes unconsciously. These identities are not simply explicated according to one's social and cultural background but developed and recognized along with an individual's amalgam of prior experiences. Consequently, Holland et al. (1998) reject oversimplified notions of identity that prioritize the characteristics of the majority, or an ideologically unified perspective that pervaded earlier anthropological works:

Persons are now recognized to have perspectives on their cultural worlds that are likely to differ by gender and other markers of social position. They are no longer considered to be unproblematically shaped by rituals and other key events of an enculturation that solely reflects cultural ideology. If public institutions and the rituals they stage are important to, but not determinant of, subjectivity, then researchers need to address personhood directly.
(p. 31)

Adopting this stance allows us to conceptualize digital game play beyond its universal recognition of boys' leisure, observing how other communities and persons interact with and within these virtual worlds.

Identities are performed in interaction. Relating to others unequivocally involves power dynamics and negotiations of meaning that provide clues regarding who we are and what we aspire to take as an outcome of such exchanges. As we navigate different environments – or “sites of self” (Holland et al., 1998, p. 28) –, we draw on our identity toolbox to convey desired meanings. These environments can include mediating devices that facilitate or constrain, and modify, expression, incorporating the complexity of the system of meaning.

I argue that games and related environments can be framed as “figured worlds”, socially and culturally constructed realm of interpretation in which particular characters and actors are recognized, significance is assigned to certain acts, and particular outcomes are valued over others (Holland et al., 1998, p. 52)

Figured worlds are created in socially and time-bound instances to which we are familiar in different degrees. They do not exist in a vacuum but are rather co-constructed and perpetuated in actions among participants. These worlds enact ways of being that are in constant evolution, and are framed as processes and behaviors instead of demarcated and rule-laden environments. In terms of digital games, they themselves can be figured worlds; however, those who interact with games as hobbyists or researchers also take on roles and interact within other related social domains, such as online message forums and chatrooms for the former, devices which mediate interaction between these actors, as for academic conferences and classrooms for the latter. As a consequence, figured worlds related to video games go beyond the structural limits of virtual environments and are shaped by organically-raised communities.

In his theorizations about identity in digital games, Gee (2003) goes into detail about how the self is projected into and from video games. Narrating his own growing experience with

digital game play, Gee (2003) described initial hesitation in dealing with these interactive artifacts due to his inexperience. The author speaks of the lack of identities from which he could draw upon to become a better game player, which could be defined as a natural disconnect with the myriad of play practices that encompass the desired figured world. Many assumptions are raised by the author to explicate this disconnect, including his age and lack of familiarity with modern games. In order to solve this problem, Gee (2003) started his attempt at an acculturation process with video games with the game *The Adventures of the Time Machine*, which presented themes and characters that he could relate to. This process illustrates how identification and establishment of a starting point are crucial for the development of motivation in game play and understanding of a game's *semiotic domain* (Gee, 2003), that is, the set of practices and linguistic features associated with a game and related game genre.

Gee's (2003) theorizations regarding semiotic domains seem to be closely related to considerations about figured worlds (Holland et al., 1998). The practices described and exemplified by Gee (2003) can encompass a variety of figured worlds. There are, however, different foci: the theory of figured worlds emphasizes power relations, social interactions, and continuous development, whereas semiotic domains can be mastered and transferred to situations where similar environmental and linguistic conditions are observed. Although transfer of these contextual perceptions is possible as far as figured worlds are concerned, individuals may improvise given time, space, psychological and instrumental variables (Holland et al., 1998).

This discussion demonstrates that Holland et al. (1998) and Gee (2003) analyze identity from distinct lenses. Holland et al. (1998) approach identity in the study of human relations and interactions, taking on a sociological and ethnographic perspective, while Gee (2003) focuses on

the psychology of individuals and their interactions with game-based tools. The objectives of their arguments are also seemingly different, as Holland et al. (1998) demonstrate the complexity of identities in social worlds, whereas Gee (2003) discusses the role of identity in learning within virtual environments, thus taking on a more instructional standpoint. These perspectives are, however, complementary and can assist in understanding learners' enactment of identities in educational game-based interventions that foster moral decision-making.

Methods

This study comprises the second iteration of a design-based research (DBR) study (Amiel & Reeves, 2008; Barab & Squire, 2004)⁴. The approach adopted aligns with the objectives of this study, which relate to improving methods of game-based instruction for moral awareness within the complex ecology of classroom environments. DBR researchers adopt varied methods, both qualitative and quantitative, observing what is suitable for the educational setting and intended goals (e.g. Gordon & Baldwin-Philippi, 2014; Jong, Dong, & Luk, 2017; Magnussen & Sørensen, 2010). As the primary objectives of this study relate to complex procedural aspects of a game-based intervention and generated data can lead to rich descriptions, qualitative inquiry is prioritized.

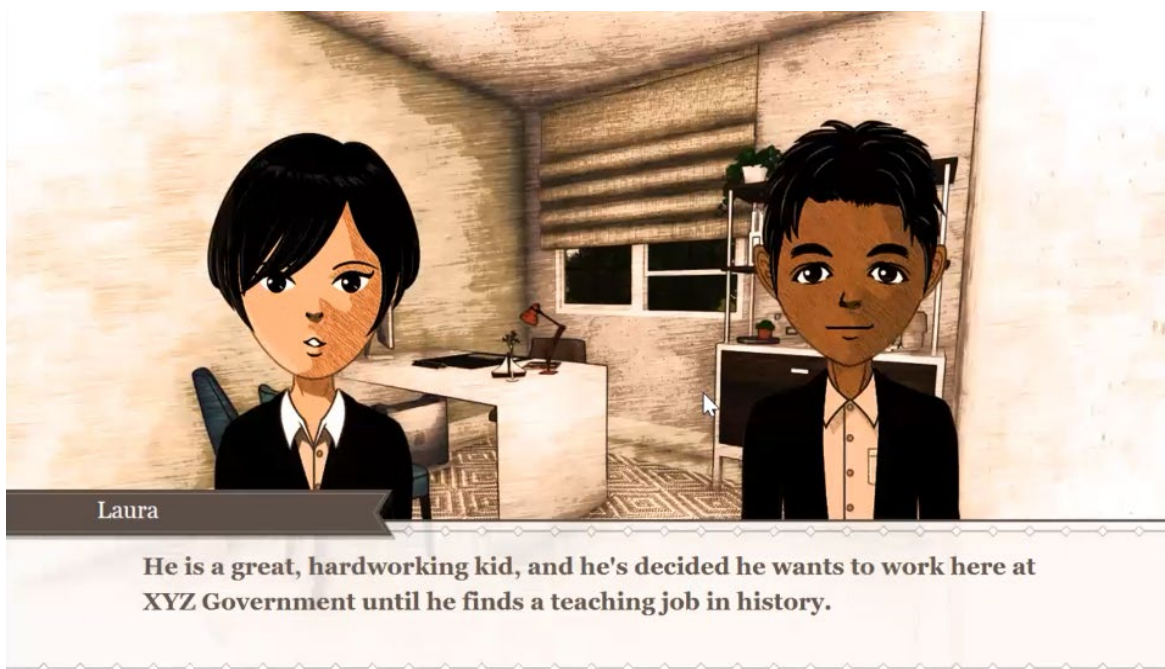
⁴ Rafael Leonardo da Silva. Reporting and analysis of first iteration data are presented in Chapter 3, which has been published on TechTrends: da Silva, R.L. The Process of Moral Decision-Making in a Game-Based Narrative Scenario through the Experience of Future Government Workers. TechTrends (2021). <https://doi.org/10.1007/s11528-021-00591-y>

Game-based Artifact

The game developed for this study was created following design conjectures (Sandoval, 2014) I developed while considering theoretical and empirical literature on play, narrative games, and moral decision-making. These conjectures, which offer guidance to the development of a serious game (Squire, 2007) to be used in an instructional context, have also undergone a review process resulting from the first iteration of this study (da Silva, 2021) and experimentation of the game with instructional design experts.

Figure 4.1

Scene Of Second Iteration Of Internal Controls Game



Taking this feedback into consideration has allowed me to reflect on design biases (Friedman & Nissenbaum, 1996) that stem from my personal experience with games and game design, as well as identify mechanics to improve learning processes. The design conjectures are presented on Table 4.1 next.

Table 4.1

Design Conjectures For Serious Games For Moral Decision-Making Awareness

Embodiment	Mediating Processes	Desired Outcomes
<i>Tools/Materials:</i>		
Narrative game-based environment (Ryan et al., 2017; de Smale et al., 2019; Heron & Belford, 2014)	Development of relationships with NPCs (Schrier, 2019)	
	Possibility for <i>meaningful choices</i> (Salen & Zimmerman, 2004)	Establishment with emotional connections with in-game characters
	Nuanced opportunities for morality and emotional realism (de Smale et al., 2019)	Moral decisions based on experience
In-game moral decision prompts	Procedural rhetoric (Bogost, 2011) for organization of environment and limitation of possibilities	Complex, but clear narrative that fosters exploration
	Moral decision-making process (Rest, 1982)	Identification of participants' processes and stances in moral decision-making
	Underlying processes in moral decision-making: sensitivity; judgment; motivation; and action (Narvaez & Lapsley, 2005)	Understanding of the role of empathy in the moral decision-making process
<i>Task + Participant Structures:</i>		
Game play	In-game qualitative evaluation of players' decisions (Ryan et al., 2017)	
	Mimicry; character impersonation and empathizing (Caillois, 2001; Consalvo, Busch, & Jong, 2019; Siyahhan et al., 2011)	Identification of participants' processes and stances in moral decision-making
Group discussion		Identification of participants' processes and stances in moral decision-making
	Participant discussion and mediation (Hafner & Miller, 2011; Moon, 2004)	Understanding of the role of empathy in the moral decision-making process
		Moral awareness through comparison with peers' experiences

For this second iteration of the study, modifications were primarily implemented on *Task + Participant Structures* with the inclusion of collective play strategies. Additionally, the user interface, which previously generated learner frustration, was modified, specific sections of the storyline were reworded to increase clarity, and real-world policies and procedures to assist in workplace-related decision-making were added.

Figure 4.2

Crucial Choice in the Internal Controls Game



The resulting artifact is a point-and-click interactive story with a moral focus. Controls are limited to choices presented to the player as the narrative unfolds on the screen. The game tells the story of Joe, the Human Resources director for a local Government, who faces a case of nepotism in the workplace. To make matters worse, Joe also deals with financial problems and sickness in the family.

Decisions in the game are complex and moral and have implications to both the main character's wellbeing and harmony in the workplace. That said, I developed the game to account for contextual complexities that may not be addressed in the Internal Controls course and other similar training modules.

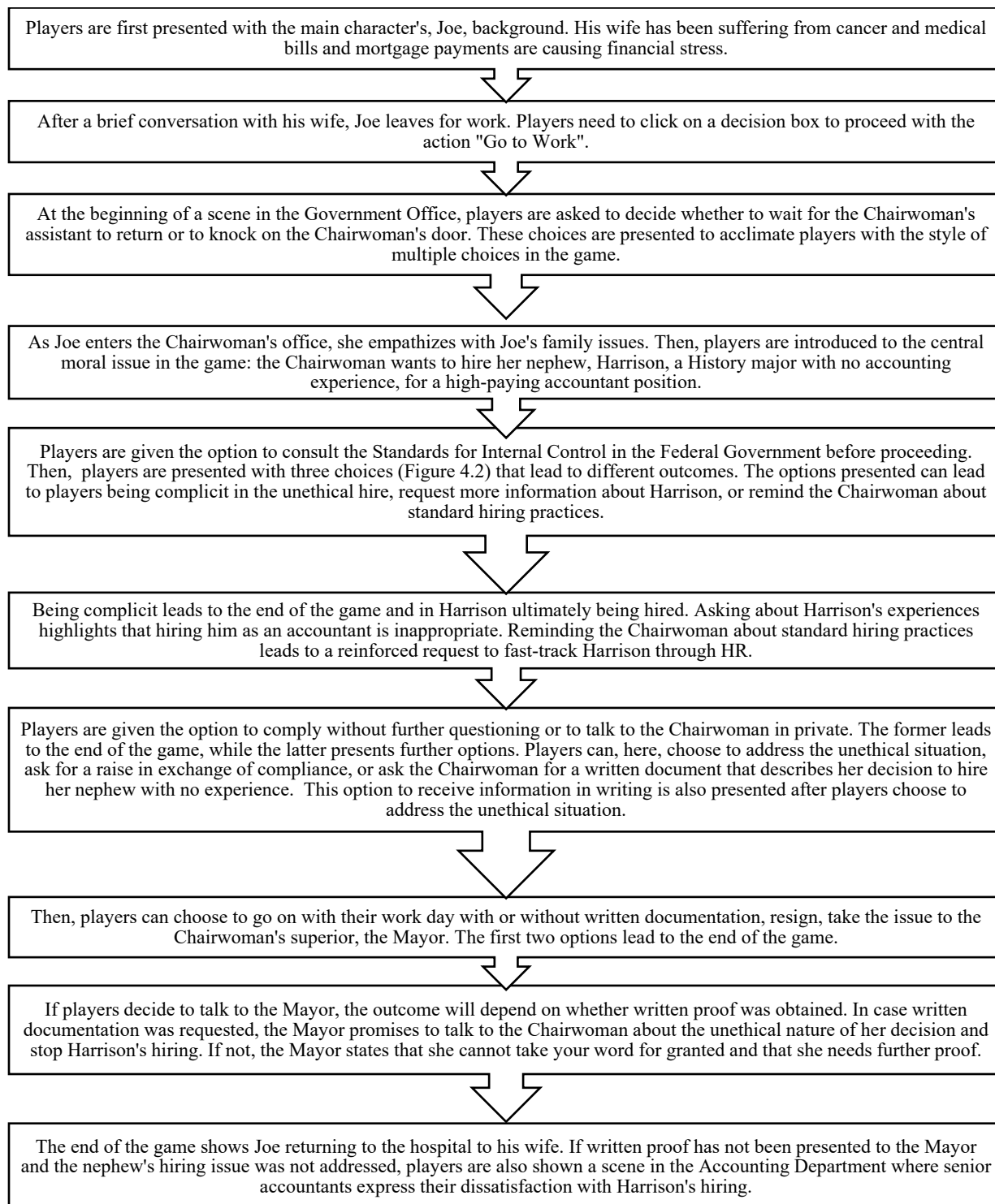
Figure 4.3

Conversation With Mayor in the Internal Controls Game



Figure 4.4 portrays the progression of choices that players are faced with in the game.

Figure 4.4

Narrative Progression of Internal Controls Game Experience

It is important to stress that contextual variables add complexity to the use of this game in instructional settings. Although the game was designed primarily to raise participants' (and learners') awareness of their own and others' moral decision-making practices, it was also used in governmental continuing education as a simulation exercise in which learners could apply their understanding of the widely-used Standards for Internal Control in the Federal Government.

Theoretical Framework

Constructivist theories of learning propose that there is not one objective reality that is shared among all of us; our context and previous experience mediate our understanding and assimilation of knowledge (Jonassen, 2000). I adopt, in this study, a constructivist lens to interpret how learners interact with a game-based scenario, considering their ability of game play and moral decisions grounded in their beliefs, assumptions, and intended outcomes.

Constructivism considers learning as a complex, nonlinear process (Fosnot & Perry, 2005) in which meanings are generated and negotiated by the participants of the learning situation. Ideal game-based learning environments are spaces that embrace such complexity and scaffold players' knowledge and skills in order to achieve a set of objectives (Gee, 2005; Marone, 2016). Success in the learning process depends on the designers' understanding of the abilities and shared knowledge of potential players. In addition, learning is facilitated, and a result of, interactions with peers in the environment. Digital games that are efficient in support learning are, as a result, necessarily constructivist in nature (Marone, 2016), and, much like constructivist theory, acknowledge learners' (and researchers', as in the case of this study) subjective identities.

Research that takes objectivistic perspectives and assess learning in game-based environments from a purely quantitative lens fails at capturing the complexity of the process of game play and knowledge acquisition. Since understanding permeates the objectives of this study, constructivist theory is deemed appropriate to capture the situated meanings (Marone, 2016) generated from participants' experiences.

Research Questions

The overarching objective of this study was to investigate how an educational game focused on Internal Controls in government can raise awareness of current and prospective government workers' own and others' moral decision-making processes. Within this scope, the research questions addressed were the following:

- (1) How do current and prospective government workers make moral decisions collectively within a game-based scenario simulating a governmental setting?
- (2) What is (if any) the role of empathy in current and prospective government workers' decision-making within the simulated scenario in collective play?

Research site and participants

Data collection was carried out in two virtual courses focused on internal controls in government at a public university in the southern United States and in a private meeting with prospective and current government workers, as well as instructors for the Internal Controls course. In total, nine participants selected through convenience sampling played the game used in this intervention.

Table 4.2

Play Sessions for Data Collection

Play Session	Participants
Play Session #1 (Internal Controls Course)	Angela (Government Worker), Donna (Instructor) + 2 Government Workers
Play Session #2 (Internal Controls Course)	Cindy (Government Worker) + 1 Government Worker
Play Session #3 (Virtual Meeting)	Robert (Instructor), Jared (Prospective Government Worker) + 1 Government Worker

Inclusion of instructors in data collection was necessary due to low voluntary research participation rates of government workers for data collection in the Internal Controls courses. The presence of instructors in play sessions added an extra layer of complexity to the play experience and the possibility of tension and influence of relations of power in decision-making. There was, however, no significant evidence that these relations of power influenced participants' choices in any of the three data collection sessions.

Five participants across the three play sessions volunteered for follow-up semi-structured interviews. All participants were White and presented little to no gaming experience. Further information regarding these participants is presented in Table 4.3 next.

Table 4.3

Research Participant Data

Participant Pseudonym	Gender	Role	Age Range
Angela	Female	Government worker	40-50
Cindy	Female	Government worker	30-40
Donna	Female	Instructor and former government worker	40-50
Jared	Male	Prospective government worker	20-30
Robert	Male	Instructor and former government worker	40-50

Data collection

After the first iteration of this study was carried out in individual play sessions, the game-based artifact was played collectively by participants in two distinct virtual instructional environments and in a data collection meeting for the second iteration of this research study.

Data collected were the following:

Video recording of game play

Participants' group game play, as well as their discussions and verbal reactions, were video recorded. Participants' behavior and reactions during such conversations were also included in the analysis.

Semi-structured individual interviews

Semi-structured individual interviews followed participants' group game play, and this process was audio recorded. The interview protocol addressed the questions that were previously

used with the focus group participants in the first intervention (Appendix A), given the richness of data achieved in the previous iteration.

Data Collection Procedures

This study was conducted in two online instructional settings and in an online data collection meeting using the Zoom platform. Contextual variables, such as interpersonal interaction, participants' attitudes, material resources, and time constraints added complexity to this data collection step.

At the beginning of data collection sessions, I described the research study and asked for a volunteer participant to share her/his game screen so that every participant in the session would be able to follow the game synchronously and contribute to in-game choices and related discussions. Participants, then, proceeded to play the game collectively. Researcher input was only allowed, in this step, for usability-related questions. After the end of the game session, I thanked participants for their time and requested their availability for a follow-up interview. Game play sessions lasted from ten to twenty minutes, depending on the depth of participant discussions and use of the policy resource provided.

Semi-structured were conducted with five participants within a week of the first data collection meeting. In cases where the interview was conducted more than a day after game play, participants were also sent the recording of the data collection session via email to remind them of their in-game choices and conversations with peers. Individual interviews lasted an average of twenty minutes.

Data Analysis

Narrative maps (Lapum, 2009) were generated to identify chronologically how each participant group reached agreement for their decisions and locate possible conflicts that might have emerged during the process of moral decision-making in game play. Narrative maps, in their essence, allow for a rich visualization of how a specific process unfolds, in this case, the collective play. Furthermore, data analysis followed a thematic analysis (Braun & Clarke, 2006) process for the coding of the video recordings of game play data and audio recordings of the semi-structured interviews conducted following the intervention. This process was conducted in order to identify themes that relate to the specific research questions of this study.

Here is a general description of the analytical process. Initial codes were generated and refined in an open coding process. These codes “identify a feature of the data (semantic content or latent) that appears interesting to the analyst” (Braun & Clarke, 2006, p. 88). These codes pertained to five major identified categories according to what aspects of the study were addressed in statements: Decision, Game, Group, Narrative, and Personal Stance. Each code within these categories provided further detail to how each of these items are part of participants’ experience during game play. Main codes with at least five occurrences in data are presented next (Table 4.4) along with their frequency.

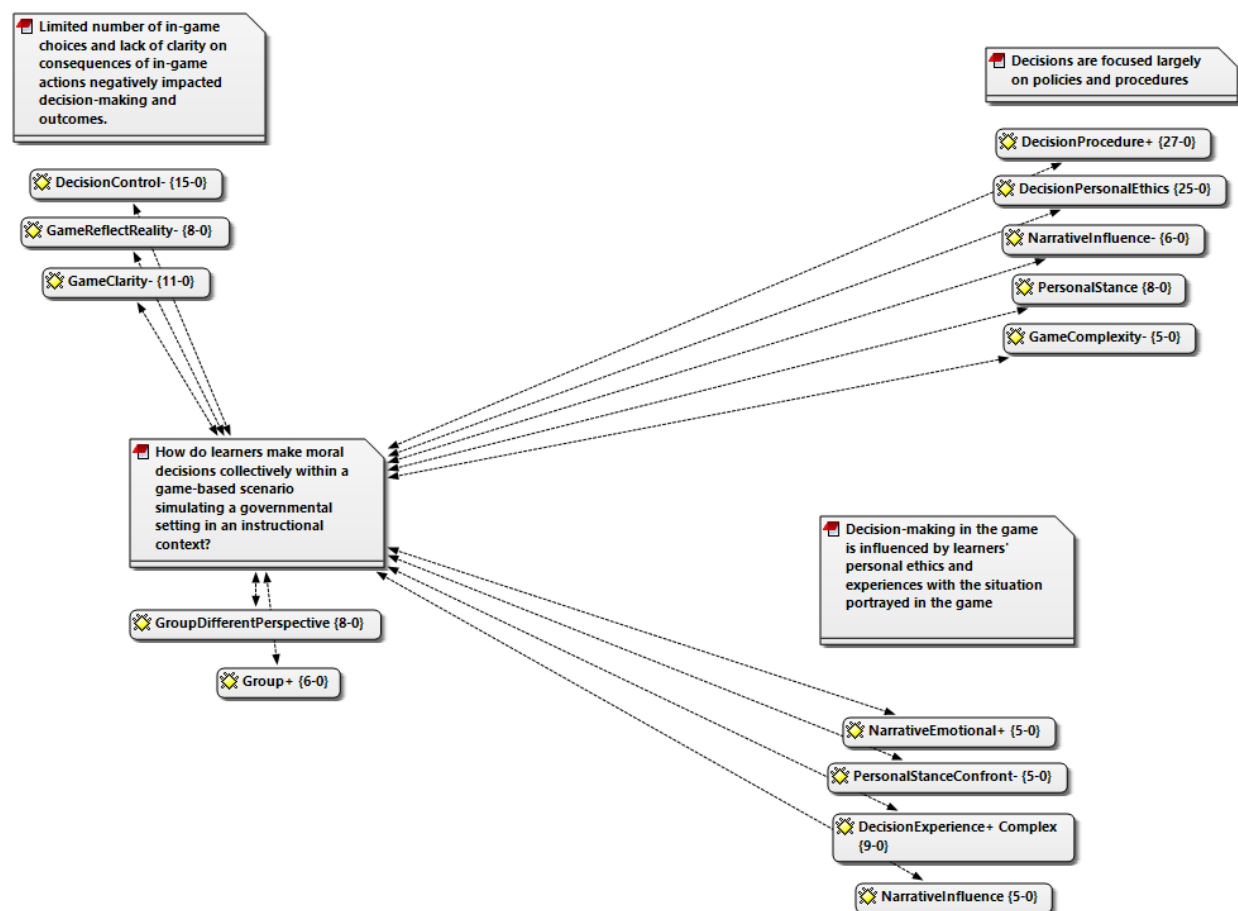
Table 4.4

Code Families And Main Codes

Decision	Game	Group	Narrative	Personal Stance
DecisionProcedure+ (27)	GameLimit (20)	GroupDifferentPerspective (8)	NarrativeInfluence- (6)	PersonalStance (8)
DecisionPersonalEthics (25)	GameClarity- (11)	Group+ (6)	NarrativeEmotional+ (5)	PersonalStance Empathy (5)
DecisionConsequence (21)	GameReflectReality- (8)	GroupAgreement+ (4)	NarrativeInfluence (5)	PersonalStance Confront- (5)
DecisionControl- (15)	GameNarrative+ (5)			
DecisionExperience+ Complex (9)	GameComplexity- (5)			

Themes were then derived from groupings of related frequent codes using network views available in Atlas.Ti, following Braun and Clarke's (2006) recommendation for visual organization of codes. In this process, "initial codes may go on to form main themes, whereas others may form sub-themes, and others still may be discarded" (Braun & Clarke, 2006, p. 90). Following this step, such themes were linked to the research questions they addressed and further refined during the development of the analytical narrative to reflect the results of this study in a succinct and coherent manner.

Figure 4.5



Validity and reliability

Member checking (Patton, 2014) was adopted throughout all phases of the study in order to establish validity and credibility of researcher's interpretations. Participants were invited to provide feedback on the design of the tool, as well as the analysis conducted by the researcher. Internal validity (Denzin & Lincoln, 2005) is addressed in the comparison of multimodal data with participants' accounts at the focus group session. Finally, in order to establish external validity, the results of the study were compared with findings from previous research on moral

decision-making in game-based environments so that the present investigation could be situated within a larger context.

Ethical Considerations

Research data can reflect participants' ideologies, opinions, and provide personal information. It is important, then, for the researcher to ensure confidentiality of the data throughout the process (Patton, 2014). In order to protect participants' identities, all data was stored in a password-protected computer accessible only to the researcher and deleted after the completion of the study (approximately three years). Participation was voluntary, and, prior to the beginning of data collection, participants were asked to sign a consent form that described the research procedures, as well as their rights throughout the research process. Identifiable data instances were removed from research materials and participants were attributed pseudonyms to which they are referred to in research reports, presentations, and any other type of public material.

Results

Data analysis of semi-structured interviews of five research participants as well as three separate play sessions of the game designed for this study is presented in this section. Themes that originated from data are organized under the research questions they correlate with. Excerpts of data are also presented to support the analysis along with their related codes.

How do current and prospective government workers make moral decisions collectively within a game-based scenario simulating a governmental setting?

Games provide learners with experiences to take on different roles, experiencing different identities according to the needs of the virtual narrative and simulated world. The digital identity

is a *project*; the player develops a projected, or hybrid, identity by negotiating their real identities with the role established in the game (Gee, 2003). This process of negotiation led participants, in this study, to ground their decisions in context-established policies and procedures, their personal and professional ethics, and experiences with the simulated scenario. Additionally, playing the game in a group allowed participants to discuss sometimes conflicting standpoints and reflect on their own moral decision-making processes. Game constraints and lack of clarity at points during the game narrative did, however, negatively affect and limit decision-making and lead to undesired outcomes. These findings are described in more detail in the sections that follow.

Decisions were driven largely on policies and procedures

Participants largely prioritized their knowledge of policies that are in place at governmental workplaces in their decision-making, rather than grounding their decisions in the storyline presented in the game. Making decisions in such a manner allowed participants to adopt a utilitarian perspective (Schulzke, 2010) in which appropriate and inappropriate actions are separated in a binary manner. Cindy and Jared, for instance, explain their unwillingness to hire the chairwoman's nephew for an accountant position as an attempt to abide by policies and procedures in the context presented:

I guess just like what the right thing to do is, not necessarily like, what helps me or what helps someone else, but what like, is the ethically right thing, which is to not engage in this like nepotist hiring process, you know, and instead, if we need to fill a position, which it seems like we did not, but if we needed to, I'm sure that there are hundreds of qualified candidates out there versus this kid who had, a history or science degree
(Cindy) [DecisionProcedure+]

If he's going to be doing entry numbers, it's okay to hire him, but he needs to go through the normal processes. And the other if he was, if he was outputting numbers like an accountant, he can't. It's just, it's against the policies of the government. (Jared)

[DecisionProcedure+]

Similarly, Robert alludes to the resource provided in the game, the Standards for Internal Control in the Federal Government, to justify his stance.

We tried to take factors in like what might be established in the Green Book, I think that we would have wanted to consider like specific policies, right. (Robert)

[DecisionProcedure+]

The binary, right-or-wrong lens (Joeckel, Bowman, & Dogruel, 2012) adopted by participants, though not intended in the design, was facilitated by the very nature of the game and the game-playing activity. Both in data collection meetings and in the online instructional setting, the lack of tangible, real-world consequences to decisions influenced participants' approach to the game as a workplace training simulation rather than a space for ethical experimentation.

It's much more difficult when you're actually the one in the, you know, the person doing the realizing that, you know, it was a game right? The decision was easier to say, Oh, I would do this. When it's actually a real life situation, it plays a little different. (Angela)

[DecisionDetachmentGame, GameLimit]

Participants also indicate that the game's portrayal of the unethical hire situation and the choices provided facilitated this clear-cut approach, suggesting possible improvements to game design.

Maybe if, if the scenario were a little bit more of a gray area, or a little bit more of an interpretation scenario, I think it would influence it more. (Robert) [GameComplexity-, GameLimit]

The focus on policies and procedures is also apparent as participants weigh in possible ramifications in the game context. Respecting the rules of the workplace was an apparent strategy to also maintain the protagonist's job in case the situation became the target of an internal investigation. In this case, a higher level knowledge of policies assisted participants who were course instructors in making informed decisions, while course takers described their reasoning in more general terms. This difference in argumentation ultimately lead to similar choices, as illustrated by Donna's and Cindy's excerpts below:

You never know when there's going to be an open records request and it's all going to blow up. [Right] And then, I mean, you can at least say, it's still may be your word against the mayor's but you can say, this is the day. And you've got the detailed records. So if it ever had to get to court or whatever, yeah, I think I would be credible to get my point of view because I documented everything. (Donna) [DecisionProcedure+, DecisionPersonalEthics]

At least into, like, maintain the internal controls that are in place, I guess (Cindy) [DecisionProcedure+]

In-game identities are created for a reason and developed through in-game actions that are provided meaning in the narrative environment, providing players with a sense of purpose (Gee, 2003). Understanding the semiotic domain, the general language and actions required in a game is a prerequisite to understanding the situated meanings that can be generated in a game.

Moreover, this meaning-making process is only possible through active player probing in the game and reception of feedback. This feedback informs players if the action is possible and meaningful in the game world, thus assisting them in learning the semiotic domain, making sense of the figured world, and generating situated meaningful interpretations. The organization of the game in terms of its content and progression led participants, thus, to improvise an in-game identity according to what they knew about the content addressed, drawing on their professional identities and previous experience.

Decision-making in the game is justified by participants as based on personal ethics and experiences with the situation portrayed in the game

Along with using policies and procedures to make decisions in the game, participants indicated that the prioritization according to their own personal ethics swayed their choices.

Arguments related to righteousness and fairness are raised by Jared and Robert:

I would say, besides the Green Book, probably personal ethics, or knowing what I would feel like it would be unfair from a personal experience. (Jared) [DecisionPersonalEthics]

If I want to live with my choices, I can't make decisions based on what's going on at home, I have to make decisions based on what's right for how we spend taxpayer dollars.

(Robert) [DecisionPersonalEthics, DecisionPersonalProcedure, DecisionProcedure+]

This stance is frequently associated with the declared first-hand experience of similar situations in the workplace, which led participants to perceive the game situation as complex and consider multiple variables that could influence decision-making. This finding demonstrates that the game and play strategy adopted successfully aligned with Ryan, Staines, and Formosa's

(2017) recommendations for moral games to include opportunities for players to draw upon their life experience when making decisions in a simulated environment.

Although ethical stances and personal assumptions did not lead, as a whole, to disagreement among group members in play sessions, interpretations of consequences of decisions were often different. In one of such instances, Donna describes her disappointment with the mayor in the scenario for questioning her professional integrity, while Angela, whom she played the game with, expressed regret in regards to policy and processes.

Thinking about that one participant like, Oh my gosh, we should have got it in writing. And just are different ways of thinking. I never went back and thought that I would have thought I was too worried about, oh my gosh, she doesn't believe me. Yeah. Why would I lie? (Donna) [GroupAgreement-, GroupDifferentPerspective]

Making decisions in a group allowed participants to discuss and reflect on decision-making and difference of perspective

Place and participation of an individual in a figured world requires recognition of one's own role, including position of power and awareness of areas for growth. Ideologies and aspirations are thus an integral part of figured worlds of play (Holland et al., 1998).

The collective play strategy adopted in the study led participants to reflect and consider decisions together, considering others' perspectives and ideologies, before reaching a conclusion. This process also contributed to bridging the knowledge gap between expert instructors and other participants. Jared describes how Robert's experience and knowledge of the subject-matter influenced the group decision-making process and possible justifications for choices in their play session:

(...) it was something that I wouldn't have thought of so maybe, but I don't know if he really found anything on that one. So I don't know if that made a difference. But that was a different idea. So that was a positive. (Jared) [GroupDifferentPerspective]

Group play sessions aided participants in reflecting critically on their individual perspectives, creating a decision-making environment akin to a real professional situation. As Jared puts it, “I think it is inherently helpful to just talk things over”. The following excerpt from Cindy’s interview also illustrates this finding:

I guess it was interesting, playing it with another person and trying, getting an idea of like, what her decision making process was (...) having her there to like, challenge maybe some of my assumptions was nice. And I feel like that's realistic. (Cindy)

[Group+, GroupDifferent, GroupDifferentPerspective]

The group play strategy, along with the possibilities of the game space, contributed to creating an “ethically notable” (Zagal, 2009, p. 7) experience that aided participants’ reflection on the meaning of their decisions and how their identities are enacted in play.

Limited number of in-game choices and lack of clarity on consequences of in-game actions negatively impacted decision-making and outcomes

Digital games are systems where a limited set of designed behaviors can be enacted, potentially hindering self-expression (Sicart, 2005). Even when the desired action is allowed by the game system, the game world should be taken into consideration as an influencing factor for that specific behavior; in other words, how our personal histories and perceptions converse with the designed world matters.

These characteristics are identified in participants' expressed frustration at the many constraints of the chosen game format. During play sessions, participants often declared their desire for choosing multiple options or choosing a course of action that was not included in the game. Donna's excerpt below illustrates one of such occasions:

It would have been nice if somehow she could have you know, ask some more questions, followed up. I expected more out of her. (Donna) [GameLimit]

The constraints of the visual novel game format and the intended short duration of the interactive experience negatively impacted the authenticity of decision-making during the activity. Factors that contribute to this effect include the definitive nature of some choices in the game as well as the low number of decision-making points leading to the final consequences, which were overwhelmingly not the desired outcomes. The lack of control due to the few possibilities in the game artifact is exemplified by Cindy:

The mayor says no, and then we just jump ahead and there's nothing I could do at that point (Cindy) [GameLimit]

It just seems I mean, that doesn't, I guess it didn't seem super realistic. Like there had to be some kind of in between. (Cindy) [GameLimit]

Furthermore, participants often questioned the clarity the wording of possible choices that could have impactful consequences. This lack of clarity resulted in participants' feeling of not being entirely in control of decisions. One instance described by Robert illustrates his hesitancy in choosing an option that could lead to unethical outcomes:

Yeah, I think that there was an option to speak with the chairwoman privately. And I kind of read that choice as, as a potential unethical choice that we were going to kind of

collude. (Robert) [GameClarity-, GameInterpretation]

Another in-game choice that was a source of confusion for many participants was “Say nothing”, interpreted as a decision for inaction and compliance. Jared describes how this lack of clarity affected decision-making in his play session:

I would have liked maybe like clarity about what “Say nothing” indicated. Like, does “Say nothing” indicate, is it like tacit support or something like that? Because that would definitely have changed the decision, at least on my part. (Jared) [GameClarity-]

The impact of decisions and the possibility of making further choices upon choosing one specific option was cause for concern for participants. Oftentimes, it was unclear how many points of interaction were left before the end of the game. It is possible to conclude, thus, that micro, specific choices (Salen & Zimmerman, 2004) did not lead to participants’ intended macro choices, that is, their desired outcomes, due to the unpredictability of the game and its uncertain duration. Even though this was intended by design, the unknown factor was another source of stress and indecision:

I guess it wasn't obvious with, with the choice that getting it in writing was going to lead to something else or if that was kind of like the end decision. (Cindy) [GameClarity-]

What is (if any) the role of empathy in current and prospective government workers’ decision-making within the simulated scenario in collective play?

Previous research has indicated that game characters can foster empathy during play and influence in-game moral decisions. These considerations, however, are largely based on studies with non-educational games. When playing the serious game (Squire, 2007) designed for this study, the storyline did not play a role in decision-making even as participants empathized with

the main character. The simulated nature of the game also contributed to emotional detachment and the adoption of a confrontational stance while making morally-laden decisions. These findings are described and illustrated in the following sections.

Although participants weighed in potential consequences of the decisions to the character's job security and well-being, these considerations did not guide decision-making

Our data suggests that the serious (Squire, 2007) nature of the game eclipsed the influence of characters' personalities and hardships on players' actions and decisions and did not lead to feelings of immersion.

The story of the game and the main character's struggles provided a backdrop for participants' decisions without influencing crucial in-game choices ("It's real life and it makes you think, it has the personal aspect of it too" – Angela [GameNarrative+]). Emotional reactions to dialogue were conveyed during play sessions, but were momentary as participants distanced themselves from the character's background to make decisions that were informed by policy and personal ethics. The disconnect between emotion and immediate action is reflected on Jared's explanation of a potentially risky decision of confronting the chairwoman:

I only thought about it at the last question, or that we were really debating on because address, like head on addressing that person was definitely going to be something that risked the position. (Jared) [DecisionConsequence, NarrativeEmotional+, NarrativeInfluence]

The simulated nature of the game environment hindered empathy-driven decision-making

Lastly, the very fact that the activity presented a simulated, not real, situation influenced the prioritization of policies and procedures adopted by participants for decision-making in the

game. As observed in play sessions and documented in narrative maps, confrontational decisions were often made with little hesitation and consideration of personal consequences for characters. Angela explicitly describes the effect of lack of reality in decision-making (“[...] It makes it more difficult outside of the game, when it's actually put in that position” – Angela [DecisionDifficulty- Reality, GameLimit]). This position is corroborated by Cindy (“I don't I don't see how you could simulate it any more than you did” – Cindy [GameLimit]).

Transitioning from the simulated personal environment to the professional setting in the game contributed to this shift of focus. Cindy describes the progressive decrease of influence of the characters' background.

I guess, I feel, I feel like initially, like his having a sick wife would maybe made my decision making a little more cautious in terms of like, if this were real life, I have a wife that sick I probably have a ton of medical bills from her being sick. I can't risk my job. [Yeah.] As, as much as maybe if it was just me on my own, with more of a cushion. But then, I guess the further we got into the story, I kind of didn't, I made kind of, I guess a bigger choice with that mayor situation because that could have really backfired on my person (Cindy) [DecisionDetachmentGame, NarrativeEmotional+, NarrativeInfluence-]

Design factors, such as the short time required to complete the game activity and the small level of detail provided regarding Joe's struggles may have also contributed to this stance. A future iteration of the game tool, thus, should present further exposure to the main character's life along with added personal in-game choices. This direction is supported by Robert's reflection:

(...) you really have to kind of get into the roleplay aspect, if you're going to consider that background stuff, and so having a little bit more to kind of get you into that roleplay I think could be helpful. (Robert) [GameLimit]

Discussion

While the first iteration of this design-based research study shed light into moral decision-making processes as three prospective government workers played the serious game in a controlled setting (da Silva, 2021), the results of this second iteration of the study emphasize the importance of identities and context in serious (Squire, 2007), moral game play.

As social agents, humans recognize patterns where certain ways of being should be enacted, such as classroom environments, professional settings, and game worlds. Furthermore, encountering an unknown social place require individuals to improvise and adapt according to contextual clues (Holland et al., 1998). Such encounters are constant, as humans navigate from one historical, cultural place to another, deeming the concept of identity to be a work that is in continuous progress. The use of games as instructional artifacts can lead to a clash of previously well-delineated identities that students take on in distinct social worlds, and this held true in this study. During group play, participants relied on their professional identities and policies in place to approach the game, which was, in turn, assimilated as akin to a training simulation. This perceived role and knowledge about the unethical nature of the situation portrayed in the game led participants to view the many constraints of the simulated environment with frustration as policy and procedure-based, defining, macro choices (Salen & Zimmerman, 2005) led to unintended outcomes that differed from what would be expected from a real situation.

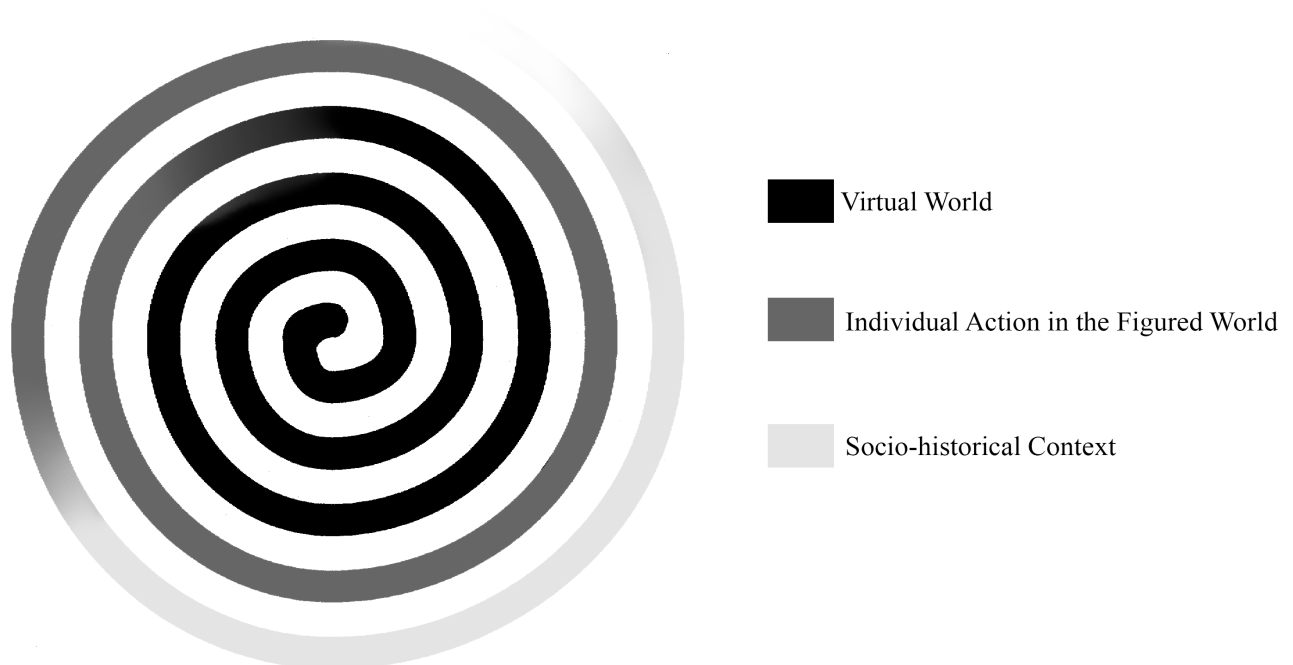
Participants' perception of the game as a simulation tool led, consequently, to a lack of influence of empathy in the game. The results of this study suggest that the role of emotion and relatedness in decision-making in serious game play can be, due to context and players' perspectives, negligible, contrary to studies that identify the role of morality in entertainment games empirically (Schrier, 2017) or theoretically (Ryan, Staines, & Formosa, 2017; Schrier, 2019). More specifically, the pressure of NPC personal storylines as well as the will to care for such characters (Schrier, 2019) did not exert any effect into the decision-making stance adopted by participants. Furthermore, the group play strategy was also found to contribute to players' focus on policies and procedures, as participants described a sense of accountability within the team.

The findings of this study's iteration align with conclusions made on the influence of intentions prior to the beginning of the experience in the first iteration (da Silva, 2021) and with previous discussions that dispute Huizinga's (1950) widespread argument that play takes a place in a magic circle, a place with its own possibilities and rules (Consalvo, 2008). Regarding the magic circle, Salen and Zimmerman (2005) point to the fragility and the requirement of monitoring and maintenance of such circle during play; Consalvo (2008), in turn, argues that there is, in fact, no magic circle as context is crucial to the enactment of identities in play. Players did not separate themselves from playful action; participants' in-game behavior was a time-based, ideologically permeated (Holland et al., 1998) negotiation between real and identity intentions (Gee, 2003). The *humble theory* (Cobb, Confrey, & diSessa, 2003) generated in this study allows to expand the limits of the magic circle theory. The findings, along with previous studies in moral decision-making in game-based environments, suggest that an individual's game

play occurs in an open-ended *magic spiral*, rather than a delineated circle, as illustrated on Figure 4.6.

Figure 4.6

Magic Spiral for Playful Experiences



In this magic spiral, structural limits become uncertain and different aspects of identity converse and merge with each other. As the spiral develops, from inside out, limits for reasoning and action within and about the game world are increasingly less delineable. In the *virtual world*, actions are limited to the constraints of the game design established by the developer; *individual action in the figured world*, however, allows players to attribute different meaning to in-game actions and test the limitations of in-game mechanics in different ways. These components of the spiral are, finally, subject to participants' identities and intentions that are comprised within a *socio-historical context*.

All in all, game play involves the designer's intentions, players' experiences, and players' *shared* experiences within social-historical contexts. In these contexts, social perceptions and understandings of game play are enacted and influence the other aspects of the *magic spiral* of play. When players are in interaction, their spirals interact and intersect in complex and non-definitive ways.

Design Considerations

As a design-based research study (Amiel & Reeves, 2008; Barab & Squire, 2004), it is also important to reflect on how the design conjectures (Sandoval, 2014) contributed to the achievement of results. In addition, these results and related discussions provide guidance for further development of the study and the game-based artifact.

The tools and tasks proposed in the design conjectures (Table 4.1) and included in the game design generally supported the desired outcomes related to identification of participants' moral stances in decision-making and moral self-awareness through comparison with peers' perspectives. Players in this study, however, did not establish the relevant emotional connections with characters in the game intended by the design. Consequently, the next iteration of this study should focus on increasing the complexity of game mechanics and storyline to improve the likelihood that empathy will be a significant factor during in-game moral decision-making. This increased level of complexity can be achieved by providing players more freedom to navigate and interact with a roleplaying game environment and explore solutions in a non-linear manner, thus increasing player control over the game experience. These roleplaying game features, thus, will be prioritized in the game redesign to avoid the constraints identified in the linear visual novel format (Lee & Chia, 2015).

Concluding Remarks

This article presented the results of the second iteration of a design-based research study that aimed at investigating moral-decision making processes of prospective and current government workers in a game-based environment. Analysis of game play data, as well as participant interviews, indicate that moral decision-making in the serious game (Squire, 2007) designed for this study was focused on policies and procedures and supported by participants' personal ethics. Feelings of empathy towards playable and non-playable characters, although present throughout the experience, did not affect decision-making practices. Additionally, the collective game play strategy adopted assisted participants' in identifying their moral stances and priorities in decision-making.

This investigation generated context-specific, humble theories (Cobb, Confrey, & diSessa, 2003). Replication of this study under different environmental conditions, with different participants, addressing other subject matter areas, or using other games or game types is not thus expected to generate the same results related to moral decision-making processes. Taking on a constructivist lens (Fosnot & Perry, 2005), participants in their study brought their own life stories, habits, and experiences to the intervention, which contributed to the understanding this study aimed to achieve.

Another limitation of this study relates to the length of the intervention. Although analyzing a short period of play time and discussion about the game led to a detailed account of game-based moral decision-making in the context studied, this study did not allow for conclusions regarding long-term effects of this isolated intervention. Possible follow-up studies

may investigate if, and how, participants applied similar decision-making stances in professional contexts.

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APPENDIX A

Semi-structured Interview Protocol

Question #1

Please describe your decision-making process within the Internal Controls game. What factors did you take into consideration when making your decisions? How difficult was it to make decisions within the game?

Question #2

Discuss the outcomes of your gameplay experience. What was the outcome of your gameplay experience? How do you feel about these outcomes? If you played the game again, what would you do differently (if anything)?

Question #3

Reflect on the role of the storyline and the main character's background in the game. How much did you take into consideration the information provided about the main character when making your decisions, and why?

Question #4

Reflect on the attitude you took when playing the game. How similar, or differently, do you think you would react when dealing with a similar situation in a real context?

Question #5

What did you learn (if anything) about your moral decision-making process by playing this game and discussing it with others?

Question #6

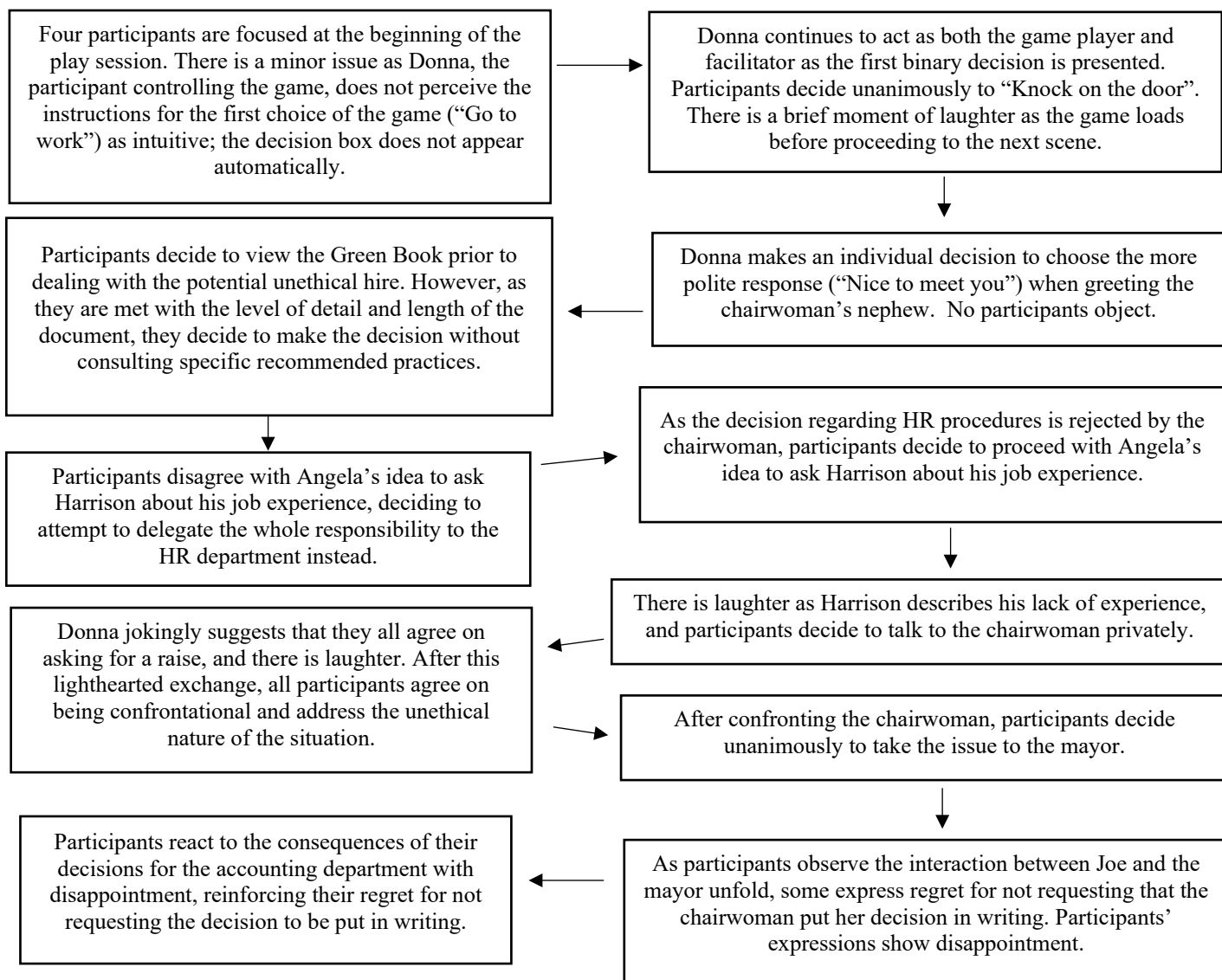
Please provide feedback on the game used for this experience. What did you like about it? What did you dislike about it? How would you change it, and why? Some areas that can be addressed are: game controls; game story; game instructions; game outcomes; player control; accessibility.

APPENDIX B

Group 1 – Narrative Map

Participants: Donna (instructor), Angela (student), and two other students

Duration: 10:07

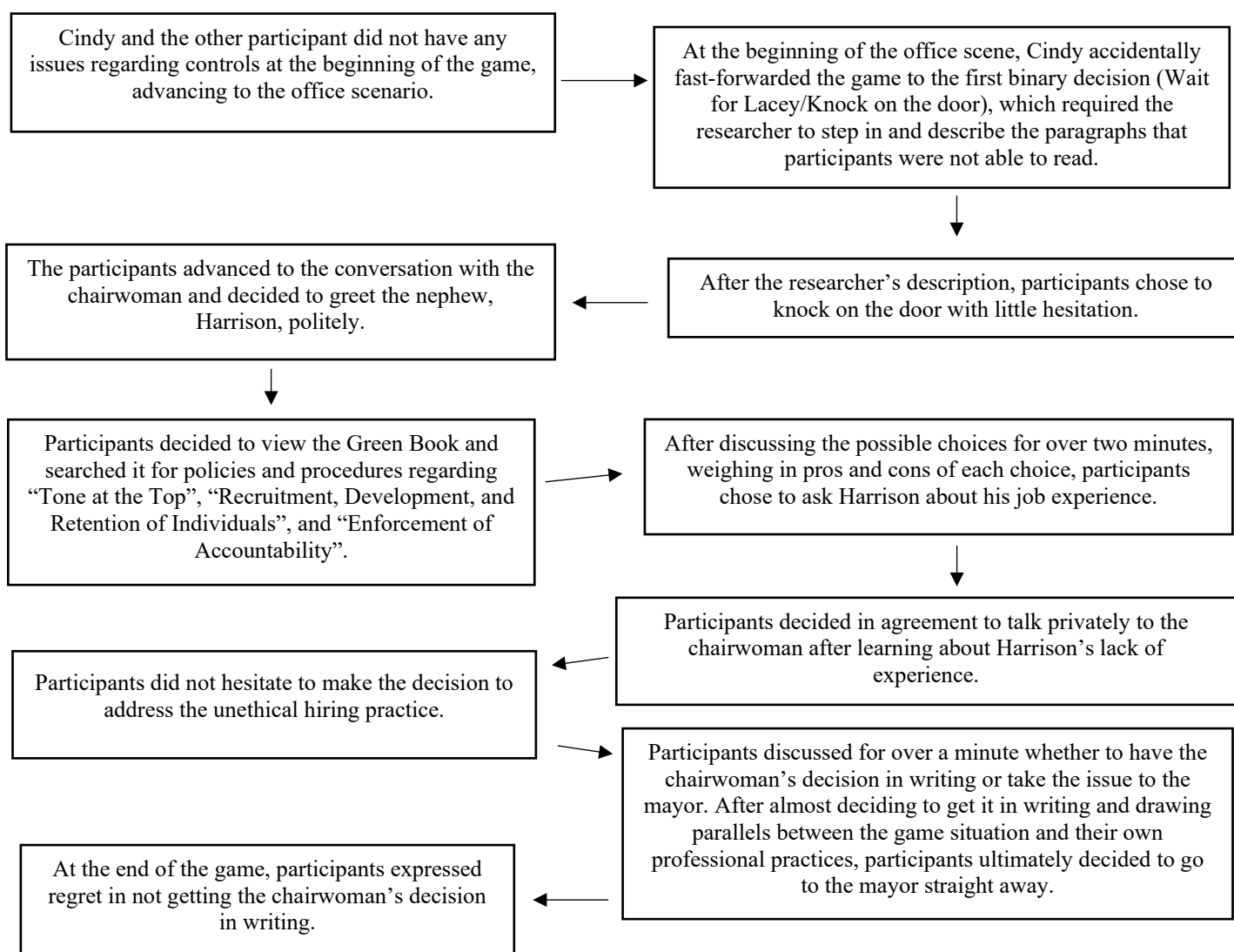


APPENDIX C

Group 2 – Narrative Map

Participants: Cindy (student) and one other student

Duration: 22:06

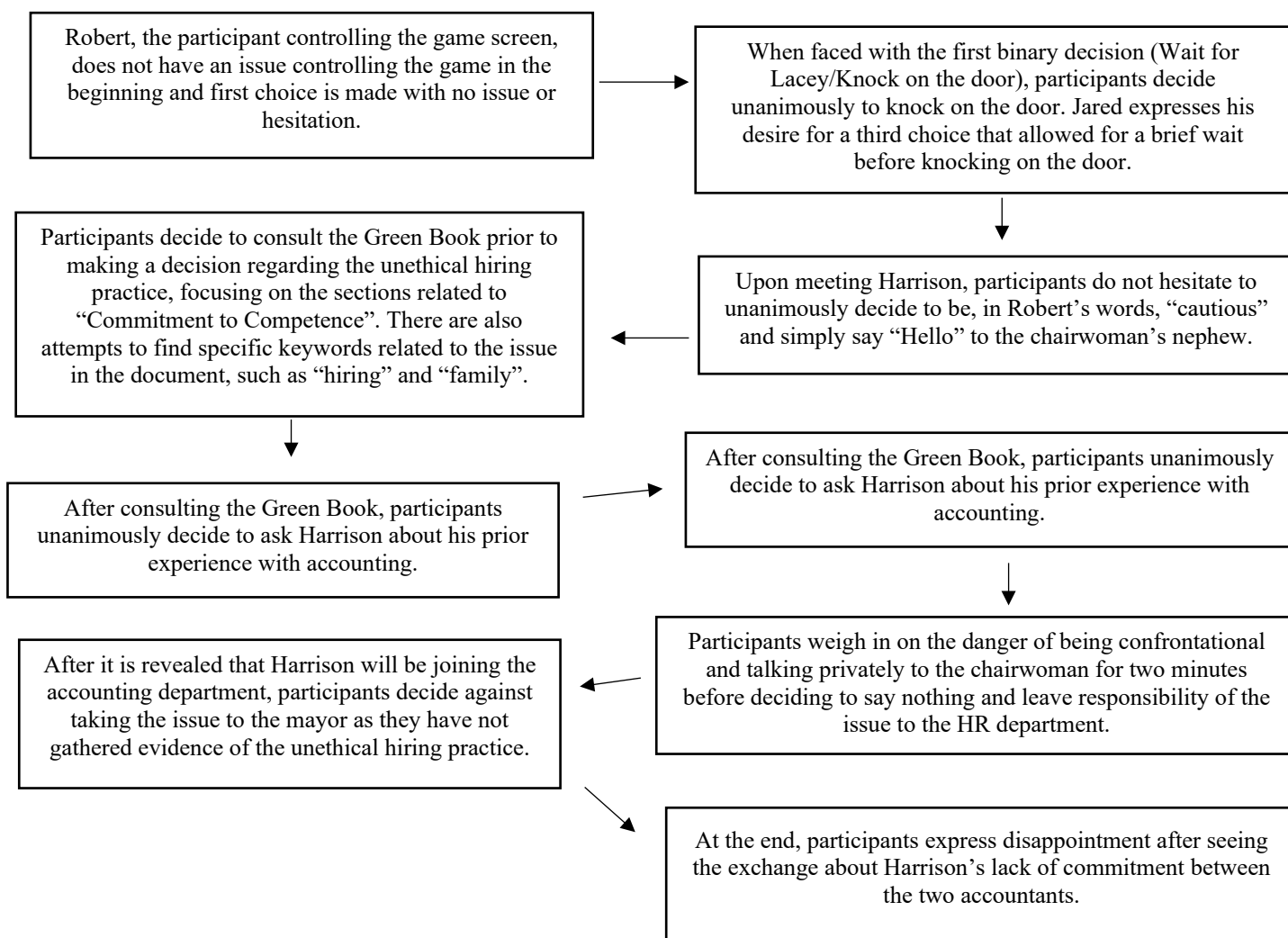


APPENDIX D

Group 3 – Narrative Map

Participants: Robert (Instructor), Jared (Department Worker) and one other department worker

Duration: 17:16



APPENDIX E**Interview Transcript - Angela**

Respondent: Angela

Date: 5/21/2020

Interviewer: Rafael Leonardo da Silva (Researcher)

INTERVIEWER: I'm just going to ask you five simple questions and one question for feedback. So it shouldn't, it shouldn't take that long. But before, before we start, I'd kind of like to ask you to introduce yourself and tell me more about yourself. What do you do? And what's your role in government and why you were taking the class?

RESPONDENT: Okay, so my name is [Angela]. I've been working for the City of [CONFIDENTIAL] now for about three and a half years now. I started in utility billing, moved to finance clerk, and then now I'm training for city clerk. So I think the treasury management class was for my finance and job, to get my certification, and it was actually my final class to get my certification.

I: So you're, you're all set now, and you don't have to see [CONFIDENTIAL] anymore if you don't want to.

R: I have many more classes, especially with the city clerk, as well.

I: We always hope that you, you come back. And hopefully next time, if I am in the classroom, I'm going to have something more exciting that what you what you experienced last time. So. So the way that it's going to work is I'm going to tell you the question, and I'm also going to paste

the question in the Zoom chat in case you have to refer back to it. So the first question is, please describe your decision-making process within the internal controls game. What factors did you take into consideration when making your decisions and how difficult was it to make the decisions in the game?

R: Okay. So I think you first and foremost you use your, your personal ethics maybe, when you make, you bring that into the workplace, then you make decisions that are based on ethics, your personal backgrounds and they always play a factor into it. But it was easier to make the decision when it wasn't you. And then fairly recently after that particular incident, I had a more personal situation here at the job. And I realized that it's much more difficult when you're actually the one in the, you know, the person doing the realizing that, you know, it was a game right? The decision was easier to say, Oh, I would do this. When it's actually a real-life situation, it plays a little different. Right?

I: When you talk about personal background, can you give me an example? What factors do you, how do you think that your personal background influenced your decisions?

R: Well, you know, I think a lot of it is just how you're raised, if you're raised to hold your head up high, and to basically stand your ground if you will, fight for what's right. Your religious background comes into it because you pay you know, you look up to a higher power, whether or not anybody sees you in the office. We know He sees you. So a lot of things factor in, you know, if you're raised in a family where, you know, bending the rules was not looked down upon, then you probably would be more apt to lead the way of the people that we were discussing.

I: And so are these personal considerations, something that made it difficult to make decisions within the game?

R: Was it difficult for me to make a decision based on those influences? Yeah. No, I think they make it easier for me because it was like this, you know, this is how I would do it and it makes it more difficult outside of the game, when it's actually put in that position. You know, it's always easier looking in and then, on the other side, right?

I: All right, so the second question, discuss to the outcomes of your gameplay experience, what was the outcome of your gameplay experience? And how do you feel? How do you feel about these outcomes? If you played it again, what would you do differently? If anything?

R: Yeah, so we went straight to the mayor, and the mayor wanted some proof. So that would have not influenced me in the game. I would have gotten the proof first, before I went to the mayor, knowing that that was, you know, the response, I don't think we, you know, we thought that that would be the response and so, that's why we didn't go that way. But, but, you know, hindsight is 20/20, So now we know it's true.

I: So I hear you talking about "we" as well. And I just wanted to ask you a side question. How do you think... did your decisions align with the decisions of the group? Or would you have done something differently? Other than what the group did?

R: Now, I think for the most part we unanimously agreed on the decision.

I: Okay. So, next question. Reflect on the role of the storyline and the main character's background in the game. How much did you take into consideration the information provided about the main character when making your decisions and why?

R: Well, it played on your heartstrings that he was having difficulties with his wife at home with the cancer. He was the only one working he needed this job you know, you can definitely relate to, to those situations, you know, most people, especially with COVID-19, you know, you need

to work if you if you can work but, um so, so that kind of played it played a role and, you know, we didn't want to get them fired for sure, but you'd still want it to keep your, your ethics and you're going to do the right thing.

I: So did it influence you in, from an attitude perspective, maybe.

R: Right. But in the end, we still, you know, have him go to the mayor and he still, you know, went to the superior and said I wasn't comfortable with this. So in the end, it didn't, didn't sway us to not do anything.

I: Thanks. Okay, so next question. And I'm expecting that this question is going to be one of the longest ones for us since you mentioned some parallels between the game and reality. Reflect on the attitude you took when playing the game. How similar or differently do you think you would react when dealing with a similar, similar situation in a real context?

R: Yeah. So, so when I played the game, you know, I had no personal experiences with it. So it's just like, yes, oh, do this, do this, do that. No doubt about it. But then, once it's real, you know, your feelings play into it and it kind of isn't as clear cut as how you should proceed, and, yes, it's just it's, um, it's just funny that you knew that we had that and then, you know, within the next week, you know, a personal situation occurred here in the office.

I: Mm-hmm. So I don't want to get into, into a lot of details, because I know that it's a, it's probably a personal it's probably a very personal and not a very good thing to share. But would you, would you kind of establish some parallels between... Give, give me some examples between the similarities between the scenario and what happened in reality.

R: So, similarities. It wasn't a new hire, but it's something came up that I feel like somebody could be stealing or borrowing money without permission from the city. And when I took it to

my superior, I could tell right away the reaction was, he didn't want to hear, he didn't want me to be bringing in that. So from the top down as we discuss, internal controls, it's not there. And I guess the fear of going above my superior's head and to per se the mayor or council, that just threaten your job because you have to deal with your actual you know, boss every day in day out. So it's never probably a good thing to go over your boss's head and let, you know, if they find out about it. That's always the worries. Yeah, no, I don't know if the mayor would have gone in the situation that you created with the mayor have gone and said he know that he came to him and said, this is what happened.

I: Right.

R: Oh, you just you don't know what, you know, you do the right thing by going to your manager, where, you know, he said, I didn't feel comfortable. You know, he doesn't have the experience in accounting. And when they persist on doing it a certain way, do you then he then... I think, in the decisions we chose, I'm not really sure. I think, you know, your character ended up having to leave it the way it was. I can't recall. Do we ever get clarification on that?

I: Yeah. The in your outcome. He, he was he was still hired because the mayor did not have proof that that was going on yeah.

R: So, you know, I've presented that. You know, I guess it's been rectified to an extent. So I kind of feel like my hands are tied at this point.

I: How do you think? Yeah, sorry, go ahead.

R: Just see how it plays out in the future. But I do feel like you know, me going to my manager unit that takes the burden off of me because I've tried to do the right thing.

I: right. And just, just, just an, it's interesting, how do you how did the training and the experience with the game itself, how did that help you navigate the situation, this real situation that you had at work?

R: I have documented proof now. Right? Because that was one thing that we messed up. I realized, you know, so I have taken the time out of my day to document everything and have that. So if anybody comes back to me, you know, I say, Well, I have this documentation. This is what I presented to my superior. He's seen it, everybody seen it, and also I shared with somebody else in my office, so, so it's not just me and my superior, it's now a three-party situation. All right.

I: You have another you have another witness to support you. Interesting. Yeah, that's, that is very interesting. That is a, that's a very good example of what we were aiming towards, what we were trying to achieve just trying to help navigating these real situations. And that kind of merges into the last question that has to do with the game, What did you learn if anything about your moral decision-making process by playing this game and discussing it with others?

R: That is easier, like you say, to make it easier to look at somebody else and judge somebody else like your character's decision making, which is really our decision making but it's harder when it's reality and it's you. I think I've always learned that through life is basically don't judge somebody else, how they would do something because until you've been in their shoes, right since I've been in your character's shoes and, and it makes it more personal and makes it whatever you share an experience with somebody I get, There's that connection and you can relate, it's more relatable. Right?

I: Yeah. Interesting. Well, so just to finish, I have a question that basically just relates to feedback regarding the game. What did you like about it? What did you dislike about it? And how would you change it, if anything, and why?

R: What I liked about it is, you know that it was interactive, that you could make those decisions. And, you know, I think I've read something similar to it in a different class. Basically, a real-life situation. I can't recall the state where that same kind of thing happened where, you know, somebody hired a relative that wasn't qualified for the position and ended up turning out you know, badly. I think they ended up doing even more unethical things within the city. So it's definitely relatable obviously, since you know, I'm relating to it now. I think the only thing that I didn't, some, there was sometimes where it went rather slow or maybe, you know, maybe. So some technical hiccups, right. But other than that, I mean, you did an excellent job.

I: Oh, thank you. Yeah, I think though, there were some technical hiccups and with these things, I think they're, there always are. there always are. But that's, there's always room for improvement. Definitely. Well, thank you very much. And thank you very much for your participation. Again, I think this is this is really valuable for me. For me personally. Obviously for the sake of my research study, but also hearing about your experience and how navigating the how navigating the game and how the course as a whole has helped you navigate a real situation. That is, that is really important for my data and rest assured you, as I said in the consent form, there is nothing though, though that is going to be traced back to you or anything. I just hope to help people develop games in the same sort of vein and develop educational interventions that are similar to help people navigate situations as you did. So thank you very much for that.

R: I think your game or some, you know, or something like it would be a very good training tool, you know.

I: Yeah. That's, that is what I hope for, for the future to develop. More scenarios like these to help people navigate different situations. Well, I think this This concludes our interview. Thank you very much again for your participation and I hope you have a great day.

APPENDIX F**Interview Transcript - Donna**

Respondent: Donna

Date: 5/20/2020

Interviewer: Rafael Leonardo da Silva (Researcher)

INTERVIEWER: Thank you very much again for, for helping for helping out with this. Um, what I'm going to do here is I'm going to paste the, all the questions in the chat just so that we can have, just so that we can have a reference if you, if you forget what the question is or if we, if we need to go back to something, okay, so I'm going to paste them over there one by one and read it out loud, and then give you some time to respond. And I'm going to sometimes I can ask you for more detail on what you're talking about or ask for clarification in some points that were are not clearly understood. This shouldn't, this shouldn't take long, I said, 30 minutes, just In case we go overboard. All right, so I'm just speaking about the, the experience of playing the game. Last week, please describe your decision-making process within the internal controls game. What factors did you take into consideration when making your decisions? And how difficult was it to make the decisions in the game?

RESPONDENT: Okay.

I: Um, you can talk, it's, the chat is just for your reference.

R: Okay. Um, I think it was more difficult because we were, I guess we're collectively watching the scenarios. So, one, I was trying to be considerate of everybody else's opinion on what

decisions that we needed to take. And I thought it was very. some of the decisions, to me the decisions were not difficult. [Okay.] And based on the importance to me of ethical behavior and what I believe is right from wrong. I really didn't see a scenario with the mayor coming back and saying, "Well, do you have this in writing?" Right? Because I think that was the, the lesson learned is like, I always assume that people know that I'm an ethical person, and I wouldn't lie. Right? But that not everybody thinks that way. And I think it was a good scenario that the mayor didn't just take my word because it had, made me think a lot. But I was a little discouraged that that the mayor didn't research it more that, still, even though I didn't have anything in the writing, she knew me to be a trusted employee. [Right.] And it would have been nice if somehow she could have you know, ask some more questions, followed up. I expected more out of her.

I: Right. You talked in the beginning about taking others' perspectives into consideration. Can you talk more about that? How is it, how's it more complicated with taking others into consideration?

R: I guess it's more complicated because maybe not everybody sees everything, the way that you see it. So if I'm looking at it from my lens and my perspective, it may be different than if I'm within a group. And I don't know, maybe there's a little bit of peer pressure, if I want to go one way and everybody else say, no, no, no, we should do this. Is there some peer pressure to maybe give in? So maybe that was, I really had to stop and think, okay, let me be considerate of others. I think my decisions fell along with the group, but I could see it if you had somebody that was kind of out, you know, had a different perspective than you [right] And you would want to sit there and kind of talk through and would you feel comfortable doing that.

I: Right. All right, so question number two, I am going to paste question number two in the chat. Discuss the outcomes of your gameplay experience. What was the outcome and how do you feel about the outcome? If you played the game again, what would you do differently? If anything?

R: Okay. And I think that, like I mentioned earlier, I think the disappointing was that the mayor didn't take, take my word for it. So I felt like I had, I had done everything the right way. So I don't know that I would do anything, any different. I don't know that I would have even gotten it in writing. Because I felt like my conscious was clear at that point, that I had done everything that I could, and if she needed it in writing, then, if she can't, I guess I'm a big believer, it's like you can watch people, their behavior. If she hasn't noticed that kind of behavior in the chairperson, then even if I had it in writing, it would have been a difficult uphill battle.

I: So you would expect that in a, established relationship? [Mm hmm.] They would understand where you're coming from instead of...

R: Yeah, yeah. I mean, no, I would have felt like if my opinion was valued, and they really, I guess, knew me as a person, they would have valued my opinion, okay. But at the end of the day, I gave her all the information. I, you know, I provided everything that I knew she could clearly go back to that person's file and see that that individual has a history major. I mean, if she really wanted to investigate it, and she could do that. And so I would just make a note of it in my files because you never know what kind of retaliation you might experience and I've had it before where management did something outside of the board and basically, you bring it to their attention that this isn't right. And then at the end of the day, they may choose to listen to what you have to say, and they may choose not to. [right] But I think in terms of what Joe was filling with his wife, it really it really had no bearing on my decision. [Interesting] You know, people go

through things and people have difficult situations. But, um, it really, it really didn't impact my decisions and my work environment. [Right.] I might try to help him outside of work if I had personal funds. But I have a feeling like as a county perspective, there's not really much I can do to help them other than support him. But from a financial, I think you have to go by the rules, you have to, it just didn't really impact my decision from a work perspective.

I: So that that actually goes into question number three [okay] So reflect on the role of the storyline and the main character background In the game, how much do you take into consideration the information provided about the main character, that is, Joe, when making your decisions and why?

R: Yeah, like I said, it really didn't. It didn't come into play at all. And with that character's background, like I said, I personally might take them aside and say, Hey, I'm sorry that you're going through this, maybe can we take a [inaudible] or something at work? or What can I do to help you to where you're spending time with your, with your wife, but I don't think it in my perspective reflected, I didn't think about what was at home.

I: Right. So it's interesting because you're talking more about helping Joe from an external perspective than acting as Joe, which was the case, which was the case in, in the game, you were making the decisions for, for that character. [Mm hmm.] And does that relate to your experience professionally looking, looking from the outside or?

R: Yeah, I mean, I don't know. I'm trying to think from, from Joe from... I know that I've had experiences where I've had to deal with situations where somebody had, maybe let's just say they had a substance abuse problem or something like that, but they were making bad decisions in the work environment and so I really, even though I like that, that person, I had to kind of put those

feelings aside. Um, and especially in fraud, I mean, usually when you uncover it, it's going to be a single mom, it's going to be somebody struggling. [Right.] So there is a sense of, I mean, it weighs heavily on you don't get me wrong. But in the end, I think, as a person, if, if I was Joe, I would still, you know, do things the same. [Mm hmm.] You know, I'd be able to talk about it. But, um, I think that gets into, I don't know, a fine line, you know, maybe then he wants a raise or, I don't know, I just, yeah, I don't know if that answered it.

I: Yeah, I did. So, um, the next question. We have six questions, and this is number four. Reflect on the attitude you took when playing the game? How similar or differently do you think you would react when dealing with a similar, similar situation in a real context?

R: Hmm, I think I would, I would do it the same way. I, I wouldn't necessarily get everything in writing. And I would feel like I would have the opportunity to take it to the supervisor above to express my concerns. And if the outlook was bad, the outlook was bad, then it wouldn't have been a place I wanted to be in anyway. Because I guess the way I look at it, it's, yes, I've got that stress at home. But if something is compromising my beliefs and my ethics that's going to compound my stress at home. Because now I not only have stress at home, with my wife, but now I've got an environment that I'm working in that is very stressful as well. Mm hmm. And you're seeing people make more than they should. And you see the impact that it's having on others. And here you are playing by the rules, and you have the situation at home. And you see that's going on. So, in my opinion, it would impact me negatively to be in that environment or just not to have said something I would have been conflicted with that.

I: by impacting you negatively, do you do you say a mentally or psychologically or no more....
productive sense

R: Mentally because I'm what we call a feeler. And so I typically put myself and that position and maybe that's what I was doing with Joe. And I do feel for him. But I felt like me as a person, it would have conflicted name mentally. It'd have been just one more thing I have to stress about, right? All this stuff going on and people not really, not really wanting to do the right thing. [Mm hmm.]

I: Nice. All right. And this is the last question that really pertains about your experience. What did you learn, if anything, about your moral decision-making process by playing this game and discussing it with others? Was there anything that you learned about yourself and about your decision-making process that you didn't know before? Did it just enforce something that you...

R: I mean, I think it was just the possibility of like, when we were going through the game as soon as we started talking to the mayor, one of the participants said, "Oh, I should have got it, we should have got it in writing". So like, she immediately knew that they should have got it in writing, or we should have, and it that never came to my mind. I just was thinking, I'm very disappointed in you, and why didn't you take my word, but, um, I don't know. I'm just wondering if I'd got it in writing, would it change the outcome for the Mayor. So, um, understand about getting things in writing. But I don't know that that person and my perspective, the way she was acting, she wouldn't have given it to me in writing anyway, she just kept everything I asked for. I'm moving, you know, well, now let's just move it along. So one, if I had asked for it in writing, it would have made her angrier at me, and she wouldn't have given it to me in writing anyway, just from the... I'm very intuitive too. So that's part of, tried to kind of feel the situation as well. Right? And intuitively, she didn't seem like she was going to want to put it in writing. [Right. Okay.] But if it's something that was significant, um, get it in writing. So I guess in terms of what

I would think through is, what am I getting in writing? Like, am I getting in writing that she wants to hire this person? Am I getting in writing, that she's hiring it against having the right credentials? So you know, when you say get it in writing, I'm thinking, What am I going to get in writing? Now, if it's a fraud case, then I would have had all my facts before I went to the mayor, I would have, you know, I would have I would have my supporting evidence. But in that case, I guess I would have struggled with what am I going to get in writing? Because the mayor can go back and see all this paperwork and [Right] background and the process and she can look at all of that. [Yeah.] And so I could have laid that out for her. Hey, look, here's our policy, mayor. This is what it says and given are each of the components that that person was circumventing that she's not going to sign something that say, "Hey, I'm circumventing the policy". See what I'm saying? So I think I was conflicted, like, what would I get in writing?

I: Right. Do you think that that would be too confrontational? [Yeah.] In the moment as well. Okay.

R: Yeah, I think so too. And I'm not a confrontational person either. So, yeah. And maybe that's being a little bit passive aggressive, that you're not dealing with it. But I felt like one, she was wrong to put us in that position. [Mm hmm.] To put Joe in that position. And he kept trying to give her an out. [Mm hmm.] And she kept making excuses. [Yeah.] And so at that point, it, she has already told me she really doesn't care what my opinion is. [Right.] So it would have been okay, I've already gone through this stuff nicely, you know, to respect the authority and chain of command and none of that's working. So yeah, I felt like that would have been, she would have gotten angry or [mm-hmm]. And I don't know that the mayor would have done anything with it.

I: Mm hmm. Yeah. You can't really foresee that that's going to be the right result.

R: Mm hmm. But it was good. Looking back, you know, thinking about that one participant like, Oh my gosh, we should have got it in writing. And just are different ways of thinking. I never went back and thought that I would have thought I was too worried about, oh my gosh, she doesn't believe me. Yeah. Why would I lie? This is a serious accusation and, no, then why would I bring it up?

I: It's interesting, it's more of a consideration the, the social aspect of it and the trustworthiness between [Yeah] between different employees, rather than what the procedures would be just to cover yourself in that situation [inaudible] think of the people.

R: And I would have like, when you say get it in writing, I probably would have gone back and had a journal and wrote, if, if this ever comes up down the road, and somebody challenges me, I would have the evidence to say, Well, this is what I did. [Hmm] this is the steps I took. And this is the outcome. [Right] I was always a big believer of just like in the one situation eventually went to the other chairpeople and then they had all the evidence, and they took action. So you never know when there's going to be an open records request and it's all going to blow up. [Right] And then, I mean, you can at least say, it's still may be your word against the mayor's, but you can say, this is the day. And you've got the detailed records. So if it ever had to get to court or whatever, yeah, I think I would be credible to get my point of view because I documented everything. And if Joe got retaliated against, you know, he had paperwork for that, too. You know, and then he could, not that he would, but he might be comforted knowing, well, if they came after me then at least I've documented everything that I tried to do to make it right.

I: Right. Nice. [Yeah.] All right. And so the last question is just asking you for a little bit of feedback regarding the game. So just some, some aspects of, of the game. What did you like about it? What did you not like about it? And what would you change? And why?

R: You know, I did I thought it was a really, really good, good experience. I liked the ability to actually make decisions and to get through the different scenario process. The only thing that, the thing that I was thinking about is the different roles of the, the individuals [right.] You have Joe, and then you have the chairperson, and then you have the mayor. Well, usually in like, the county government, you'll have a chairperson and. and the city government you'll have a mayor. So what that might be confusing if you're just teaching it to governmental students. So what I would do is I would change the title of the chairwoman to city administrator [oh okay] and then that would follow Joe would report the city administrator and then the mayor has the ability to hire and fire [Hmm.] So from an oversight that's the only thing that I think it might be conflicting because one's more of a county term and the other is the mayor. But the hierarchy would, I would change her title to city administrator. Okay, and then that would flow [it would make the hierarchy a little bit clearer for] Yes, yes, because that was confusing to me. Well, chairperson, I don't really have a chairperson in city said yeah, that's the only thing is I would just change that title. And to from chairperson to city administrator, city manager. Okay, and then that person would report directly to the mayor. Because especially like even in the Green Book or the COSO so you've got primarily the governing body, so the mayor is responsible. Primarily the administrator's responsible but ultimately it's the mayor because they can hire and fire the administrator [right]. If you link at those chains of commands, it goes all the way up. And kind of like in _____, the city, the mayor, and then that yeah, that's the only thing that I would

change, Rafael, make her position a city manager, administrator. [Okay] But I thought it was good. I mean, everything else or seems like things that we deal with in local government. It's real life and it makes you think, it has the personal aspect of it too. And I thought it was really good.

I: Well, thank you very much. I think that this was the least amount of suggested changes that I have gotten so far. [Really?] Yeah, this, this is actually the second iteration of this game. And there were lots of changes from the first the first iteration to those one.

R: Okay, so the other thing you might think about because it says there's a link to go to the Green Book, and maybe if there's something because it's so long to maybe if there's something specific about, like, you could dig into that, and find the part where it talks about hiring the right individual, and then maybe you could focus on that in the Green Book. Like it's part of the control environment. So it's a principle within the control environment. This is hiring the right competent individuals [right.] So instead of just pulling up the whole thing, direct them to that specific action, and I can help you with that, too.

I: And that is something that I've been struggled with. I think it was one of the most concerning aspects for me, because in the first iteration as well, I only had one table with the comparison, the comparison between the COSO and the Green Book. Control environment principles. Mm hmm.

R: So, um, so yeah, I would either tie it back to that or you could tie it back like a fake HR policy that says, "We're not going to hire", I mean, you could do either one, but I think just opening it up for the whole Green Book, that would have been a lot for Joe, you know to go back and look at or whoever, that to either nail it down to "Well, here's our city of Anywhere policy.

This is what it says.” And then you could directly show them that she was violating it.

[Interesting.] But I could help you with that. That is

I: Yeah, that is something to think about.

R: Yeah. But I thought other than that, it's great.

I: No, thank you. Thank you so much. And thanks for, thank you very much, again, for participating and for all the feedback for all, for all the comments and everything.

APPENDIX G**Interview Transcript - Cindy**

Respondent: Cindy

Date: 10/19/2020

Interviewer: Rafael Leonardo da Silva (Researcher)

INTERVIEWER: [...] for being here and for allowing me to, to get some, some more of your experiences and to, for participating in the research study. So, first of all, I would just like you to talk a little bit about yourself, what's your role in your organization where you work and why you are taking these courses?

RESPONDENT: Okay. So I work for the Office of [CONFIDENTIAL], I am the [CONFIDENTIAL]. So, really, I guess I'm like, [CONFIDENTIAL]. So, um, I don't know, I really I need a better elevator pitch for my job. But I've been in that role for a year. So we try to get everyone at [CONFIDENTIAL] to go through the budget and financial management certification. Which is why I was taking these classes; this one was one of the last two. Yeah, that's pretty much. No, internal control, internal controls is the last.

I: Internal controls is the last.

R: Okay. Yeah. So I took internal controls and purchasing last week, three days, and that was it. I'm done now. Thank goodness. But no, I mean, I enjoy it. You learn a lot for sure.

I: No, I'm sure but the feeling of being done, I understand. So I just wanted to talk to you to debrief the experience that we had last week with my game for data collection. So, I'm going to

ask you five questions related to the game itself. For, for purposes of research, and then one more question that will be more related towards feedback on how to, to improve the game. As I ask you these questions, I'll also paste them in the group chat, just so that you can have a point of reference in case you need to remind yourself of what I'm really asking right now. So first of all, please describe your decision-making process within the internal controls game. What factors did you take into consideration when making our decisions? And how difficult was it to make decisions in the game?

R: Hmm, sorry, I'm trying to think

I: Take your time

R: I guess sometimes it was kind of difficult to try and to get in the mindset of the person that I was playing in the game in that, I guess this is maybe a me thing, but I didn't know, it wasn't always obvious like which, god, I'm so um, my brain is really mush today.

I: It's okay

R: Like, I guess like in real life, they are thinking about specifically is like you're asked if you want to, like get the person, the boss to like, put her decision in writing or if you want to call them there, I forgot the other option was and I guess in real life, I would have done like a combination of those things, you know, so like, gotten it in writing and then gone to the mayor and then of course, when you choose go to the mayor, then you don't have anything in writing then it's just kind of like Oh, well. But and I guess like, as with everything, and if you think it's in the game, you're kind of torn between doing what you think is what you're supposed to be doing, which is not giving in to the boss and her nepotism. Um, but then also like, okay, but this is your boss. Um, and that's maybe a little easier in a hypothetical situation to choose, to do the right

thing than in real life, whereas, I mean, I think that [another data collection participant] made a joke about this, but and I'm sure that you are aware, but like, not that exact scenario, but very similar to that scenario happens every day, and God forbid, oh, and, you know, no one's going to the mayor about it. So I don't know if that's answers your questions, how difficult. Yeah, it's a little easier within the game, because of, you know, they weren't real people didn't have any real input, career path, you know.

I: So do you think there are any specific aspects of the game that could, could be changed in order to, to increase that similarity with the real world? Or is it just the fact that it's a game? And it's not real life? That that affects that? I don't know.

R: Yeah, I mean, I don't I don't see how you could simulate it any more than you did

I: Okay. So, that takes us to the second question, discuss the outcomes of your gameplay experience, what was the outcome of your gameplay experience, how do you feel about these outcomes? If you played the game again, what would you do differently? If anything?

R: Like the outcome, in terms of what?

I: Yeah, what happened in the end?

R: Oh, I guess we took on her nephew and the other employees within the finance budget division were upset. I guess. Hmm. And, you know, I think if the game were, the game were to continue eventually, that would probably end up being with one of those people leaving or being bad at their job, because what's the point of even being good at your job? If you have some like no one come and get hired? I think if I were to do it again, I would get the written proof from my supervisor before I went to the mayor. But yes

I: So I, there was a lot of indecision between you guys before going through these more important decisions towards the end. Can you talk a little bit about that conflict? The bouncing back of ideas between the two? What was your reasoning about being torn between these two options, go straight to the straight to the mayor and getting it in writing?

R: I guess I guess it wasn't obvious with, with the choice that getting it in writing was going to lead to something else or if that was kind of like the end decision. Does that make sense? [Yeah.] So it seemed like that was really not an action. Or I couldn't project in my head, like where that action was going to go next. Whereas like, go to the mayor was a very, like, it's a big action. It's a big decision, but it's doing something you know, and going back and forth on

I: it's more tangible than, it's more tangible and effective than doing something and not knowing what's going to happen

R: Right, I didn't know where [inaudible] to leave necessarily.

I: Okay. Sounds good. Alright. Let me go to question number three. Reflect on the role of the storyline and the main character's background in the game. How much you take into consideration the information provided about the main character when making your decisions and why.

R: Yeah, I guess, I feel, I feel like initially, like his having a sick wife would maybe made my decision making a little more cautious in terms of like, if this were real life, I have a wife that sick I probably have a ton of medical bills from her being sick. I can't risk my job. [Yeah.] As, as much as maybe if it was just me on my own, with more of a cushion. But then, I guess the further we got into the story, I kind of didn't, I made kind of, I guess a bigger choice with that mayor situation because that could have really backfired on my person. So I guess I forgot, or didn't

take it as into consideration as again, like if it were real life, it was really a situation. Um, but yeah, I think that something I definitely tried to take into consideration when making choices on the first time that guy's behalf, I guess.

I: Mm hmm. So tell me about this process. Was there something specific that made you kind of transition between being more cautious to the more confrontational decision decisions towards the end?

R: I mean, I think, I think it all comes down to maybe my misinterpretation of what getting the decision in writing was going to be. I mean, it kind of is, what was it was the third choice, were there only two choices?

I: The last choice was just to do nothing and go on with your day.

R: And so but it sounds like get the decision in writing, and then like, and then something, right, I would have gone with that. But it doesn't, it seemed like both, it was either do nothing, do nothing but get it in writing or do something. And I think that that was I just ultimately had to choose to do something. So

I: Sounds good. All right. And you talk you talked about the main characters wife sickness. Was that the most important thing that kind of stuck to you? Was there any other aspect of the characters or something else that was curious to you, or that influenced your decision making in the game?

R: About the characters backstory or about

I: Yeah, the characters backstories

R: I guess, I mean, and I think that [another data collection participant] and I both had kind of a different interpretation of who the like, chair of the board person was in terms of like, where they

were in the organizational structure. And I mean, I'm, I'm in [confidential] and it doesn't really have a board.

I: Yeah.

R: To answer to, but I think maybe, I think maybe that my misunderstanding of how important that she was may have affected some decisions.

I: That's interesting. So this is the fourth question and we kind of went over this, but reflect on the attitude you took when playing the game, how similar or how differently do you think you would react when dealing with a similar, similar situation in a real context?

R: My attitude?

I: Yeah, just not necessarily the context that was shown in the game, but your real-life experience in [confidential]?

R: Well, I guess for the game, I wanted to treat it as like, what, what would I do? If this wasn't? Like, I think maybe through the game I was like, what's the correct thing to do or the right thing to do? And I think that, that's obvious frequently, but there's a difference in what's the correct right thing to do and what you actually do given like the real circumstances that you're in. So I like to think that if this were to happen to me, I would not hire the kid straight out of college just because he knows my boss, but I've known better managers who have ended up in that situation before and I don't know if I trust myself that if I was really put in a corner, would I make that, would I do the right thing, or would I just try not to rock the boat much, if that makes sense.

[Right.]

I: All right. So now we go to the last question. What did you learn anything about your moral decision-making process by, by playing game and discussing it with others, and by others, I mean, just [another data collection participant] that played with you?

R: I don't know, I don't, for some reason, I don't I don't know how to answer the question. I feel like in the game, if it necessarily lead to the outcome I wanted, which was for that teenager not to be hired, I think I made correct or at least, like morally correct decisions and at least, like alerting the mayor, even if I didn't have proof. So at least like I could feel okay, that I didn't just let it happen, you know? [Yeah.] And so I guess, I guess I learned that maybe if, if I was put in a situation like that, like, I would, I think I'd at least do some version of letting someone know, is even if it isn't, like, as drastic as going to the mayor, but at least into, like, maintain the internal controls that are in place, I guess? I don't know.

I: So, I asked you about, about the morals and you kind of transitioned to the, to the internal controls, which is more the, the, the rules and regulations and the system. So you mentioned morally correct in your response, what do you mean by morally correct? In this case?

R: I guess I guess just like what the right thing to do is, not necessarily like, what helps me or what helps someone else, but what like, is the ethically right thing, which is to not engage in this like nepotistic hiring process, you know, and instead, if we need to fill a position, which it seems like we did not, but if we needed to, I'm sure that there are hundreds of qualified candidates out there versus this kid who had, a history or science degree?

I: Yeah. Yeah, that is actually based on one of the animations that we had for scenarios we have we have some of them and I just adapted it to a game with all these social and complexities and all that stuff. All right, so we're done with the, the research part of it, I just wanted you, just

wanted to prompt this last question, please provide feedback on the game used for this experience. What did you like about it? What did you dislike about it? How would you change it and why? And then just give suggestions of some areas that can be addressed such as game controls story, the instructions, the outcomes accessibility, and all of that.

R: I liked it. I liked how it started out with kind of like low stake decisions, I guess to like, get us to understand how the game was going to work and move on to the next thing. All that controls are fine I guess yeah. I guess my only, not concern but thing that I wanted to be different was it seems like, again like, making it more obvious what like the get the decision in writing next step would be and I don't know if we had chosen that one where we would have gone in the game, but it also seems like going to the mayor and then she says, oh well you don't have proof and then it's just we jump ahead and then it just is like okay, well now this guy works here now and everyone's pissed. And it just seems I mean, that doesn't, I guess it didn't seem super realistic. Like there had to be some kind of in between. The mayor says no, and then we just jump ahead and there's nothing I could do at that point. But that's it.

I: Mm hmm. Sounds good. All right. Do you have any other any other things that you would like to, to mention about the game or for the experiences in itself? No.

R: I guess it was interesting, playing it with another person and trying, getting an idea of like, what her decision-making process was so. But no, I don't have anything. I'm sorry. I hope that this was somewhat helpful. I really feel like

I: It's really helpful. Don't worry about it. You talked about playing with another person. Do you think, just one final question, do you think it would have been easier or more difficult or just different if you had played it by yourself?

R: If anything I think it would have been different, I don't know easier or harder. But I think being like, forced to talk out why I wanted to choose something, rather than just like, click it maybe pulled me out of my like, Oh, I'm going to win this game. Like there's no winning, it was just decision making. So um, and, and having her there to like, challenge maybe some of my assumptions was nice. And I feel like that's realistic. And the real workplace too is if you need you need someone that you can bounce off of, because if you get in your own head about things, sometimes you will make the wrong decisions because you've assumed the wrong inputs. I guess, so.

I: Alright, that's all, that's all I have for today. And I want to thank you very much once again for going through all these steps with the process and for being so willing to participate.

APPENDIX H

Interview Transcript - Robert

Respondent: Robert

Date: 11/02/2020

Interviewer: Rafael Leonardo da Silva (Researcher)

INTERVIEWER: So this follow up interview is just to go over a few, a few decisions that you guys made in the game, and to explain kind of some of your reasoning behind that and the factors that influenced in your decisions. And as we go through the questions, I'll paste the questions in the chat as well. So you can refer back to it. So the first question is, please describe your decision-making process within the internal controls game. What factors did you take into consideration when making your decisions? And how difficult was it to make the decisions within the game?

RESPONDENT: I think that we, we tried to make decisions ethically. And so we tried to take factors in like what might be established in the Green Book, I think that we would have wanted to consider like specific policies, right. I, I expect, the game mentioned some specific hiring policies for the government. I would want to take that into consideration. But I think in the bigger picture, we wanted to try and act ethically. To be honest, I think the most difficult part of making decisions within the game was the fact that it's a little bit binary in the choice-making, and I think that it seemed like we wanted our end goal to be not to hire the guy, but it was kind of difficult to make the choices necessary to get to that end result, if that makes sense.

I: Okay. It does make a lot of sense. So for, for this question, you mentioned making decisions ethically? Can you just clarify what you mean by making those decisions ethically?

R: Yeah, I think that we did not want to favor the Harrison guy, the nephew, but because of his relation. So again, we didn't, we didn't do a lot of in-depth discussion, but I felt like the will of the group was that it would not be ethical to hire him without putting him through the same process, since it was basically a favor and, not just really a favor, but also kind of a favor with a threat, right. And she opened up asking of our sick wife so... that, we wanted to make the choice to behave appropriately. And I think I was most concerned with kind of acting in a way that is defensible, right, not just legally defensible, but ethically defensible, that I could say, this guy didn't deserve to be hired, therefore, we didn't go through the process that way, if that makes sense.

I: Sounds good. Yeah. So the second question, discuss the outcomes of your gameplay experience. What was the outcome of your gameplay experience? How do you feel about these outcomes? If you play the game again, what would you do differently if anything,

R: Our outcome was that we hired the guy basically created a not, not only acted unethically by hiring someone based on nepotism, but then also kind of created a toxic work environment by ticking off the two accountants already working in the department and contributing to, again, that atmosphere of gossip and all that kind of stuff. And I don't think any of us felt really good about that outcome. If we, if I were to play it differently, I would try to, to work the choices in such a way that we did not hire. Yeah.

I: So when you say work the choices in what way? Can you talk to one specific decision point that you would have made a different decision at?

R: Yeah, I think that there was an option to speak with the chairwoman privately. And I kind of read that choice as, as a potential unethical choice that we were going to kind of collude. But I think in light of what the outcome was, I think that was the choice where we were supposed to reject the request, if it were. I'd probably make that choice there.

I: Okay. Sounds good. Any other choices that you that you regret, or that you would change in the game?

R: I regret the going to work part.

I: [laugh] We always do. So the third question, reflect on the role of the storyline, and the main characters background in the game? How much did you take into consideration the information provided about the main character, when making your decisions and why?

R: I tried not to take that into too much consideration. I get the idea that what we're doing there is kind of creating some pressure to want to protect the job. But again, if I'm, if I'm, if I want to live with my choices, I can't make decisions based on what's going on at home, I have to make decisions based on what's right for how we spend taxpayer dollars. So while it certainly would, I'd consider it and it'd concern me, I didn't, I tried not to let it impact decisions. So at least that wasn't the intention.

I: Yeah. When you say making decisions considering what's going on at home, what would that look like?

R: Well, again, I think the way the scenario is playing out is, you kind of want to make the decision to not rock the boat so that you don't lose your job, and potentially lose your house and your health insurance and all that stuff. So again, there's, within the scenario, I think, I feel like there's a little bit of a veiled threat around that, but I didn't feel like it was strong enough that I

was, I felt concerned for my job. So I would try not to make that, make, let that influence decisions.

I: Okay. Right. So this question number four out of five are related to the game. And then I'm just going to ask you a little bit of feedback regarding the game itself, reflect on the attitude you took when playing the game? how similar or differently, do you think you would react when dealing with a similar situation? In a real context?

R: I think I'd behave very similarly. Again, I feel like we kind of messed up the choice making a little bit that didn't get the outcome. But I feel like I've actually been in similar situations. I've never been asked to hire someone; I've been asked to give people interviews based on relations. And I feel like that I have tried to behave ethically and above board, right, like not, not let anything be shady and quiet zone, right? We're going to discuss this openly. And if this person is qualified for an interview, we're going to bring them in for the interview, that kind of, that kind of thing. So I feel like that in the game, I acted as I would in real life.

I: Okay. So, and then, the last question, what did you learn if anything about your moral decision-making process by playing this game and discussing it with others?

R: I don't know if, I don't know what I learned about myself. But I definitely feel like when, when faced, if given those same decisions individually, I feel like there's more of a chance that you behave unethically versus when you're in a group, if you have to talk it out in a group and kind of be accountable to other people, I think that you're more likely to try and make the ethical choice than maybe you would be if you were, not having to answer to someone else.

I: Yeah, as you mentioned, this interpersonal accountability is that a factor that really influenced, you think, the whole process of the game for you, would make different decisions if you were playing by yourself?

R: I don't think so in this particular game with this scenario because I do feel like it was, hum, I don't know, it was pretty clear cut right there. Maybe if, if the scenario were a little bit more of a gray area, or a little bit more of an interpretation scenario, I think it would influence it more. But in one like this, that I think is fairly clear cut, everybody recognizes you're probably not doing the right thing by hiring the guy. And I don't know that it influences as much. I'm trying to think of an example, come up with a good example. But if it were like a small thing, or a gray area type thing than that that group might be different. Right? [Right.] Like if, like, if you were looking at like a travel reimbursement, for example, and it was something like, Oh, it's 51 miles, or it's 49 miles, and you're only supposed to do it if it's 50 miles, right? Like maybe if you're by yourself, you're like, oh I'm going to round that up, that's fine. Whereas if you're discussing it in a group, and you might all kind of... you shouldn't do that.

I: Alright, so these are the questions related to the research study itself. And the last question, I would just ask you, ask you to please provide feedback on the game used for this experience? What did you like about it? What did you dislike about it? How would you change it and why. and some areas that can be addressed are the game controls the game story, the instructions, the outcomes, player control, accessibility, and other say you can think of.

R: Okay, I like the story. And as you know, we use this as a scenario basically, in other classes. So I think it is a scenario that's compelling and a good teaching point on this topic. So I like that a lot. The game itself could have used a little bit more feedback, like some kind of, some kind of

click to continue type button would have been helpful. There were times when I wasn't sure I was supposed to click, am I supposed to not click. And like, especially when, when you knew there was a choice coming, which you had to click to get the choices. Like there's so, there could be a little bit more clarity around, around that, like, when, when you're clicking to be, to go to the next thing, and when you're not clicking to go to the next thing. I like , like I said, I like the story. I also like the graphics. I kind of like the setup. I don't know if it was just because of the choices that we made. But I could, I think I might like having a few more decision points. Right? Like,

I: Can you give an example?

R: Yeah, I'm thinking, I'm trying to think of an example. Right? Okay. So we didn't pick this, but if we if we had decided to kind of like, go straight to HR, and raise the issue with HR, then maybe there could have been a couple of intermediate steps where the chairwoman comes back and is like, "Hey, I thought we were going to push this through, what's the deal?" And kind of giving you another opportunity to say yes, or no, essentially, like, maybe with a little more pressure, like, you know, "I thought we agreed that it was best for everyone's interest", if this you know, a little more explicit threat to make you consider more about the background versus just the ethical decision. Because again, you really have to kind of get into the roleplay aspect, if you're going to consider that background stuff, and so having a little bit more to kind of get you into that roleplay I think could be helpful. I don't know how, like if there's a time constraint, like if it has to be a certain kind of length, I can see that being a limiting factor, but I would like to see a few more, like decision trees, right. Make a couple of choices and then have them have a little bit different impact.

I: Okay, sounds good. Yeah. I try to keep it as short as short as possible just for the sure that nature of the scenario, I wanted it to be able to be played in 15, 20 minutes during a class. So, but definitely, it's something that I will think about it for the future.

R: Or maybe then maybe, if you don't have that maybe you have a couple of additional choices at the point. Right, rather than just having one, two, three choices, right. And maybe you could kind of still keep it short but have a couple of different outcomes based on different choices.

I: All right. Sounds good. Well, that is that is all that I have for today. It's really great to see you again.

R: Yeah. Great to see you. And I like I like the, the Portuguese pieces there too.

I: You're the first person that actually mentioned that, because everybody kind of brushes, brushes it off. But I wanted to have at least like cultural, some cultural aspects to add into that as well.

R: Sure, yeah. No, I thought I thought it was a nice touch.

I: Yeah. Well, thank you.

APPENDIX I**Interview Transcript - Jared**

Respondent: Jared

Date: 11/02/2020

Interviewer: Rafael Leonardo da Silva (Researcher)

INTERVIEWER: So I just asked you back here just to kind of debrief the game experience. Just by clarifying some, some points and getting more of your perspective on a few different aspects in the game. There's going to be five questions related to the research questions. Plus one question that will provide feedback into the game itself. And as we, as we go through the questions, I will paste them into the chat, so you can refer back to them in case you need a reminder on what the question is about. So the first question is, please describe your decision-making process within the internal controls game. What factors did you take into consideration when making my decisions? And how difficult was it to make these decisions?

RESPONDENT: So I would say, definitely took the Green Book into consideration. I think a lot of them were really easy, except for the last one. And maybe, when we addressed, asked the nephew, his qualifications, I think those are the only two we really like, had to debate on everything else was a pretty like, quick, clearest, clear option. I would say, besides the Green Book, probably personal ethics, or knowing what I would feel like it would be unfair from a personal experience. And then I had worked. And it wasn't accounting, but it was invoicing. And so I knew it was possible. Because I didn't have any experience in accounting. Before I did the

invoicing position, I knew it's possible to just have a degree and go into government finance and an entry level position. But if you had to be outputting numbers and not entering numbers, that's a big difference. So um, so that was a large portion of what I was gauging is, because if he was entering numbers, anyone with sense can do that. But if he was outputting numbers, then I was more concerned. So that was kind of what I was trying to figure out.

I: Okay. You've talked a little bit about personal ethics in the game, what do you mean by these personal ethics?

R: Oh, like, it's it is not a, it's not right to help someone just because someone in power is asking for that. That would be either bribery, or blackmail, or corruption, one of the three, depending on the circumstances. So.

I: All right, so the second question, discuss the outcomes of your gameplay experience. What was the outcome of your gameplay experience? How do you feel about these outcomes? And if you could go over these and then to play the game again, what would you do differently, if anything?

R: So the outcome was, the kid got hired, and people were mad about it, and the protagonist kept his job. So for the protagonist, I think the number one priority was keeping his job. So that's good. Then, for the kid, he wanted the job. That's good. But then, and that would be the same with his aunt, your superior, and then but the business side of the protagonist and his subordinates, the accountants. They had a bad outcome pretty clearly. So I would say I felt, I think that's also what the group of us felt that we didn't want the outcome the way it happened. We were hoping by passing on to HR, what they would, they would use, I was assuming HR would use the Green Book as well and be able to more validate their reasoning behind why they

couldn't hire him. I don't think I've voiced this, but one of the reasons I wanted to say nothing was because I think I mentioned that I don't think it's consent, I would just basically, by just saying nothing, I would be able to put it on HR's plate in the sense that, assuming they would have the authority to say no to the superior [right]. But I, if, if the game had asked like, would you, would you like, recommend him? I would definitely say no to that, that would be an easy one. So I guess if I played again, knowing the outcome, then I would probably talk to the person privately and say, like, he can't be. Because I don't know what, what the conversation will be. But I probably mentioned the, if he's going to be doing entry numbers, it's okay to hire him, but he needs to go through the normal processes. And the other if he was, if he was outputting numbers like an accountant, he can't. It's just, it's against the policies of the government.

Government XYZ.

I: Okay. That is the name that we have used for the fictional, fictional governments that exist out there. Yeah. All right.

R: I think also, just, just to mention that the, the second of the, what I just said about the second playthrough, I would assume that would not jeopardize the position of the protagonist. And if it did, going through HR would be, again, a way to ensure that doesn't, that doesn't become an issue. Because it's going to be in writing at that point, because currently, she's just in the room with the superior. And with words against words, it's not going to do anything good for the, the lesser individual. So that's another reason why I'm going to HR, is definitely, has its advantages, although, clearly, it didn't go as we had hoped.

I: Okay. So the next question, reflect on the role of the storyline and the main character's background in the game, how much did you take into consideration the information provided about the main character when making our decisions? And why?

R: I, I definitely thought about how in current politics, there's discussion about the new health care and how currently health care is tied to your job. So if he loses his job, his wife dies, essentially. And the ethics of that beside, probably, I only thought about it at the last question, or that we were really debating on because address, like head on addressing that person was definitely going to be something that risked the position. And by weighing outcomes, you could definitely see that having like a crappy, crappy co-worker would be less of an impact on to like a person's death. So I guess that would be the lesser of two evils. But I would say that was not as significant as, thinking HR would be more by the book, [Right], than deciding that right then in there.

I: Okay. All right. Anything else that you'd like to add for this question?

R: Um, I don't think so. [Okay] That poor guy just frowns the whole time.

I: [laugh] Oh, that's, that's, the sad face I was able to do, so bear with me there. So reflect on the attitude you took when playing the game? How similar or differently do you think you would react when dealing with a similar situation in the real context?

R: I think it would be pretty likely for me to say, say nothing. But largely because I am an introvert. So it would be, it would have to be something really egregious for me to say something right on the spot, I would have to think about it, and then maybe go back to it. Surely compose myself first. So I think saying nothing would be likely. But then I also think I would be, I would be more, what's the word?, present, I guess, in the HR process, like, I would definitely check in

and see what was going on. And maybe, like, send an email to the HR director. And, and be able to put in writing that, like, I don't condone, like, I don't support, an outputting hire but I support an entry level or entering numbers person. Again, to put documentation of what you, what you prefer in order to secure yourself in case the person fires you or in case you go under, like an ethics investigation about the, the hiring of this incompetent individual.

I: Okay. So kind of covering the bases and making it clear what your position is.

R: Yeah. So yeah, I would, I would probably do that. What we did in the game, I would probably go through that. If nothing else, because of being, being quiet and not trying to get a conflict. And being you know, polite, I'm not going to go trash this poor kid. So I think it's probably accurate.

I: Okay. All right. So this is the last question that pertains to the research questions. And then I'm just going to ask you a question related to feedback. What did you learn anything about your moral decision-making process by playing this game and discussing it with others?

R: Well, I guess I learned that I'm not, I have a higher threshold for creating a conflict in order to preserve my personal ethics, or maybe not my personal ethics or, but in order to be the person who stands up to the aggressor, I guess. So that was interesting. Let's see. I think the, the perspective of a hire, I don't know if I really thought about that either, I thought more about that coworker angle of trying to like, blow the whistle on maybe a superior or something like that. But I guess this person is also potentially blowing the whistle on the superior. Was the superior an elected official? Or was she a board member

I: She was a board member, and then the person that you could take your complaint to at the end was the elected official.

R: Okay. Gotcha.

I: Okay. Is there anything that you would like to say about discussing it with others part? We talked about how you, what you learn about your moral decision-making, but did discussing it with others have a role in this learning process?

R: I think it, I mean, it helps to slow down the decision, I guess. But I think, I mean, I would have used the Green Book. It was, I would have probably gone to the competence. Although I don't, I don't think [Robert] really wanted to do the conflict of interest, I can't remember what he wanted to do. But it was something that I wouldn't have thought of so maybe, but I don't know if he really found anything on that one. So I don't know if that made a difference. But that was a different idea. So that was a positive. I think it is inherently helpful to just talk things over. Like you have the interaction where like, my wife will ask me about, ask me a question about something complicated in [her area of expertise]. And of course, I don't know the answer, but then she figures it out just by asking. So I think that that might have accounted for things.

I: Just talking things through and getting, getting to a specific line of reasoning by herself instead of... Alright, so the last question, please provide feedback on the game use for this experience. What did you like about it? What did you dislike about it? How would you change it and why?

R: I would, I would have liked maybe like clarity about what "Say nothing" indicated. Like, does "Say nothing" indicate, is it like tacit support or something like that? Because that would definitely have changed the decision, at least on my part. So maybe that would be interesting. Of

course, I would understand if, part of it is the unknown about saying nothing, which is fair. Maybe being able to have something after the say nothing. To be able to like, change your mind would be interesting, like being able to just say nothing, and then have another chance to, to, to say something, of course, they had the mayor issue. But I would be suspicious of talking to a mayor, when it's possible the board official has sway on them, too. So I don't know. But maybe talking maybe, again, along the HR lines of, HR department contacts you and says, "do you recommend them?" And then you would have a decision there. But I think it was a pretty good situation that was provided to us.

I: Thank you very much, I have been trying to improve this little by little. And it's going to continue to be improved.

R: Yeah.

I: So do you have anything else that you'd like to add about this or any other things about the experience itself? Or the game?

R: Are you studying people who are already in the field? Of like, accounting or government?

I: Yes. So it's, it's both people who work at [the department that offers courses related to Internal Controls] and people who are in taking classes, in different functions, and government.

R: Okay, because I think that'd be important. If students were doing it without the government experience, they might produce different answers.

I: Yeah.

R: Certainly, they would know less about the Green Book.

I: Yeah. And it's also I mean, it's, it's important. I think, the first, the first of, the pilot study I did with actual students at the time. So that was a, that was a different perspective, as well. And now

going on to doing the study with people who are actually working and experiencing those situations and having to refer to the Green Book that is completely different. So that's been, that has been really, that's been good for me in terms of richness of data. Looking at these different perspectives. [Interesting] Thank you very much. This was a, this was very helpful and thank you for your time.

CHAPTER 5

FINAL CONSIDERATIONS

As the study of specific theories within instructional design develops, complexities naturally arise. Such a process is no different as it pertains to game-based learning. In the last decade, games have been studied through a variety of theoretical and subject-related lenses, including topics that are central to this study, namely morality and empathy. Within this context, models and theoretical discussions have been prevalent in the academic literature. A natural next step is to adopt and adapt the best ideas from the literature to develop practical educational interventions. This was the goal of this design-based dissertation study. More specifically, this research has addressed morality and empathy from a qualitative standpoint in order to map the processes of moral decision-making as well as identify the influence of personal and professional identities in decision-making within a serious visual novel game.

The design, development, and results of this study were presented in three distinct chapters that address different topics and phases of the research. In Chapter Two, I presented theoretical discussions related to play, game-based learning, and morality in order to identify design conjectures for the development of a serious game intended to foster prospective and current government workers' moral self-awareness and decision-making. Chapter Three presented the results of the first iteration of the study, taking into consideration separate play experiences of three prospective government workers. Chapter Four addresses the second iteration of the study, conducted after modifications were made to the game to improve usability. In this phase, participants also played the game collectively so that comparison and contrast of moral decision-making practices could be better observed in data. That said, this concluding

chapter presents a summary of the contents of each chapter, including findings, the implications of this research for the advancement of moral game-based learning theory and practice, as well as a reflection regarding my experience with design-based research and the development of the design artifact used throughout this process.

The Core of the Dissertation

In this section, I present a summary of content of each article included in this article-based dissertation. Findings that pertain to each part of the study are also discussed.

Chapter 2: Design Conjectures, Possibilities, and Constraints

In Chapter 2, the study was introduced conceptually and theoretically. These initial discussions established the adoption of a perspective of morality as a process (Rest, 1982) that unfolds in decision-making rather than as an immutable standpoint. Based on theories of play (e.g. Caillois, 2001), game-based learning (e.g. Squire, 2007; Gee, 2005; Rieber, 1996), and morality and/in games (e.g. Schrier, 2015; Sicart, 2013), I developed design conjectures (Sandoval, 2014) to guide development of a serious game (Squire, 2007) to be used in research interventions to investigate moral decision-making processes of prospective and current government workers. This chapter also addressed the development of the serious game using the visual novel creation software *TyranoBuilder Visual Studio* (STRIKEWORKS, 2010), as well as the testing of this design artifact. Participant observation and feedback contributed to the refinement of the design conjectures to include possibilities for collective play and, consequently, the negotiation of decisions during play. Such feedback was also important to further develop the tool, improving usability and providing authentic, real-world policy resources to aid decision-making.

Chapter 3: First Iteration

Chapter 3 provided an in-depth investigation of moral decision-making processes of three prospective government workers. More specifically, the following research questions were addressed:

(1) How do learners make moral decisions within a single player game-based scenario simulating a governmental setting?

(2) What is (if any) the role of empathy in learners' decision-making within the game?

Data analyzed for this first iteration included recordings of participants' game play as well as a focus group conducted with the three participants after this intervention. Qualitative analysis indicated that, although decision-making possibilities were considered limited, the game required participants to reflect on potential outcomes of in-game choices prior to making important decisions. Comparisons with real-world work settings were prevalent throughout the play experience. Furthermore, levels of empathy towards game characters varied according to participants' initial dispositions. These results allowed for the advancement of a humble theory (Cobb, Confrey, & diSessa, 2003) of moral decision-making processes in prospective government workers' serious game play practice: Prior to starting game play, participants bring their own attitudes, as well as personal and professional interpretations, to the game environment. Different factors, such as perceiving the artifact as a game or simulation (Rieber, 1996), as well as gender and gaming experience (Greitemeyer et al., 2010; Klimmt et al., 2006), influence this initial lens. Then, participants proceed to apply such lenses in analyzing the game environment, situation, and characters. This analysis is followed by decisions on moral courses

of action that consider distinct variables, such as organizational procedures and characters' conditions. Finally, these decisions are acted upon within the constraints of the virtual world.

Chapter 4: Second Iteration

Chapter 4 reports the results of the second iteration of the study. Modifications were made to the game following participant feedback, including re-wording of several sections of the game to increase clarity, changes in visual style, and inclusion of authentic resources to aid real-like decision-making. In this iteration, participants also played the game in groups instead of individually so that decisions could be negotiated and richer data regarding the decision-making process could be collected. In total, nine participants, including prospective and current government workers as well as continuing education instructors, were present in three different collective game play sessions. Five of those participants volunteered for follow-up semi-structured interviews. The research questions addressed in this iteration were the following:

- (1) How do current and prospective government workers make moral decisions collectively within a game-based scenario simulating a governmental setting?
- (2) What is (if any) the role of empathy in current and prospective government workers' decision-making within the simulated scenario in collective play?

The results of the second iteration indicated that workplace-specific policies and procedures, as well as professional ethics, were prioritized when making decisions in the game. Although participants considered the well-being of characters during play, as evidenced by emotional reactions to the story of the game, empathy was not a primary factor in moral decision-making. Constraints to decision-making due to the game format and style were considered a limiting factor for player agency and nuanced decisions, often leading to binary,

“right vs. wrong” (Joeckel, Bowman, & Dogruel, 2012) interpretive choices. These data reinforce the findings of the first iteration regarding the influence of players’ intentions and dispositions prior to game play: since participants adopted a professional lens, the game was approached as a training simulation rather than a virtual space for experimentation. The collective game play strategy also contributed to this approach due to an increased sense of accountability towards peers to do what was considered professionally appropriate in the given scenario.

The humble theory (Cobb, Confrey, & diSessa, 2003) derived from data adds to arguments against Huizinga’s (1950) magic circle theory. Findings from both iterations indicate that serious play takes place not in a magic circle, but in a magic spiral, as players bring their experience and cultural backgrounds to game environments. These predispositions are negotiated with the possibilities and constraints of the virtual world so that players can reach intended outcomes.

Implications of this Study

The results of this design-based research study present both theoretical and practical implications for the study of moral decision-making in serious games. This sub-section introduces the theoretical and practical implications that can contribute to and suggest future directions for research.

The humble theories generated in this study contribute to the understanding of moral decision-making in games, from player context and intentions to implementation of in-game decisions. The theory of moral decision-making generated in Chapter 3 can assist researchers in investigating game play processes in greater detail, either in instructional or informal contexts.

The magic spiral presented in Chapter Four offers a perspective to consider play styles and player profiles in serious game play. Both of these aspects are integral to play theory and have been neglected by game-based learning empirical research.

That said, another theoretical contribution of this study relates to the comprehensive integration of play theory (e.g. Sicart, 2013; Bogost, 2008; Caillois, 2001) in a game-based learning study. Theorizations of play were crucial both for the development of the serious game (Squire, 2007) created for this study and for the methodological design to reach the intended results related to the moral game play process. This integration allows educational researchers to perceive games not simply as means to an instructional end, but as complex designed environments with procedural characteristics that can elicit strong individualized responses from players.

The strategies for data collection presented in this research also suggest possible distinct configurations for the organization of game-based learning environments. More specifically, the results indicate that serious play does not need to be an individual experience. The rich discussions observed in collective play in the second iteration demonstrate that playing together exposes learners to different ways of thinking and play strategies that can enhance the learning process.

Personal Reflections

This study, from its inception to the completion of this dissertation, has encountered many challenges of different natures. This personal reflection describes some of these challenges, including the comprehensive search for data collection methods and data analysis

procedures and the impact of the COVID-19 pandemic in the research process, as well as how they were dealt with. I also discuss personal lessons learned while conducting this research.

As is the case for many researchers that opt to investigate topics or perspectives that have garnered little attention in empirical investigations, this study presented many challenges in regard to data collection and analysis. From the very beginning, my intention was to capture the complexity of morality in game environments focusing on serious games (Squire, 2007) or, more broadly, in games in education. However, extensive literature reviews yielded few results that addressed the complexity of processes that occur during play. My focus was on that gap: What happens in one's mind as one interacts with a game environment from a moral standpoint? What is the influence of context and player intention on these moral decisions? Is a relationship established between player and character? If so, how? Due to the lack of established practices that addressed these questions in empirical studies, the first major challenge I encountered pertained to the research methods I would use for this investigation. As different methods were considered, I realized that looking at the broader qualitative landscape to adopt strategies that were not previously used in game-based learning was the most satisfactory option. This approach led me, for instance, to Lapum's (2009) strategies for narrative mapping, which greatly facilitated the understanding of procedural moral decision-making phenomena in play.

The major challenge that followed was related to the game to be used in this study. Due to the specific nature of the content to be addressed in this study as well as the broader lack of morality games of a serious (2007) nature, I knew from the start that I would have to develop a serious game for this study myself. Even though I am a resourceful instructional designer, I am not a game developer. Thus, the assistance of a software that could facilitate the coding process

was required. Luckily, several tools that exist for this specific reason have emerged in the last decade, including the software ultimately used when creating the game for this study, *TyranoBuilder Visual Novel Studio*.

I opted to conduct a design-based study for two main reasons. First, a design-based research (DBR) design would allow me to learn and improve aspects of the research methods and data collection strategies after a first intervention, which was, in my view, necessary considering the novelty of analyzing gameplay procedurally. This was found to be true as the second iteration led to results of a different nature from those observed in the first. Second, DBR would allow me to gather feedback from participants and improve the game so that potentially richer research results and learning outcomes could be achieved. Even though the game was improved between iterations, constraints of the software used for development as well as my own limited skills did not allow me to address possible changes in the tool that could have decreased participant frustration and increase the possibility for nuanced decision-making.

The last major challenge was contextual, as data collection for the second iteration was planned for in-person continuing education courses for government officials in the summer and fall of 2020. As the COVID-19 pandemic forced universities to adapt usual in-person instruction to online formats, the need for changing data collection plans also arose. For this reason, instead of collecting group gameplay as it unfolded in a physical classroom, participants volunteered to play together in virtual meeting rooms. Even though this led to a potential decrease in richness of data as participants could have distractors in their physical environments, this study still offers valuable contributions to the study of how games can be used to raise individuals' awareness of their own moral decision-making and improve such decision-making practices.

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