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RESEARCH ARTICLE

Designing role-playing video games for ethical thinking

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Abstract How can we better design games, such as role-playing video games (RPGs), to support the practice of ethical thinking? Ethical thinking is a critical component of twenty-first century citizenship and we need to design ways to creatively support its practice. This study investigates how male participants, ages 18–34, make ethical decisions in three in-game scenarios in *Fable III*, an RPG, and one additional scenario. The decision-making processes of thirty participants were analyzed; twenty were randomly assigned to play *Fable III* and ten were assigned to a control condition of written ethical scenarios. Results suggested that participants practiced a variety of ethical thinking skills and thought processes in both conditions, including reasoning-, empathy-, reflection-, and information gathering-related skills and thought processes. Three hypotheses were investigated and detailed, and any significant differences or similarities that emerged between conditions and across game scenarios were explored. Based on this analysis, four preliminary design principles were described.

Keywords Games · Ethics · Design · Learning · Education · Digital games

Introduction

How can we creatively and innovatively teach ethical decision-making and the critical thinking of ethics? One possible way is through games and gaming experiences. But can a game—even a commercial one—encourage gamers to practice ethics-related skills and thought processes? In this article, I first explore the types of skills and thought processes involved in working through three ethical scenarios in a role-playing video game (RPG), *Fable III*, and one additional researcher-provided scenario. I then use these results, as well

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as the textual, gameplay, and narrative content of the scenarios, to posit four possible design principles worthy of further empirical study. These design principles can potentially help guide the creation and use of future games that support ethical thinking and decision-making practice.

Critical thinking skills, such as interpretation, perspective taking, and reflection are integral to ethics and ethical decision-making and should be a core component of ethics education (Schrier 2014a; Paul and Elder 2009; Paul and Elder 2012). RPGs, due in part to their ability to help players try on new identities and explore decisions and consequences (Schrier 2014a), may be one way to support the practice of these skills, yet the use of RPGs to motivate ethical thinking and decision-making is only beginning to be empirically studied (Schrier 2014a; Steinkeuhler and Simkins 2008). Understanding how to better design RPGs to support ethics education is particularly important considering how many adults and youth play games and spend time in gaming environments in general. According to research firm NPD, $15.39 billion was spent on videogames in the United States in 2013 (NPD 2014), and 211.5 million people in the United States play games (NPD 2012). ESA's 2014 report explained that 59 % of Americans play games (ESA 2014). While the target audience of Xbox 360 and Xbox One is males ages 18–34, and over 30 million men played on consoles like the Xbox and Sony Playstation, more women play games overall than men (Harwell 2014).

By analyzing how participants think through ethical decisions in RPGs—even in games that are commercial, mainstream, and primarily designed for entertainment—we can further assess the limits and possibilities of these games as environments or activities for ethics education. We can then use this analysis to propose and investigate the design elements and factors that are related to the participants' performance of these skills. Understanding how specific game elements may connect to the practice of ethical thinking skills can help us better design future RPGs and modify existing RPGs for use in ethics education and practice. Further, by looking specifically at male gamers, ages 18–34 years old, who are also regularly associated with many ills of game culture (such as online harassment), we can potentially show how game players may also practice ethics-related skills and thought processes in mainstream console games. However, the purpose of this paper is not to explore the extent to which male game players are actually participating in harassment or other problematic behaviors in games or online environments. Rather, I want to investigate if they are also participating in ethics-related skills and thought processes in one particular game.

Defining ethics and ethical thinking

In this study, I use the term "ethical thinking" rather than just "ethics," making ethics an active and evolving cognitive process, rather than an already-decided fact. Ethics typically refers to public rules or principles, and the customs of one's culture (Tierney 1994), and how to live life humanely and with humanity (Sicart 2009). Many different approaches have emerged as to how one defines an activity, attitude, or behavior as ethical, including utilitarian or Kantian ethics (Shafer-Landau 2010). Ethical thinking, rather, does not focus on a particular approach to ethics (such as Kantian) or what choice was ultimately made in a given scenario (such as sharing one's winnings), but rather emphasizes the constellation of skills and cognitive process related to getting there. In other words, ethical thinking, as I define it, describes how a person determines what to do to achieve a humane life, how to

treat others ethically, how to reach ethical decisions, or what is required to enhance humanity (Schrier 2012, 2014a, b; Schrier and Kinzer 2009). Ethical thinking is a set of critical practices that can be learned, observed, and assessed in terms of the skills and thought processes used.

Ethics education

Ethics is an integral component of many different disciplines, and it is also being taught as a standalone subject in the K-12 classroom (Paul and Elder 2012; Elliott 2007), as well as at the college level. For instance, ethics practice has been applied to business (Brown 1994; Wines 2008); counseling (Bradley and Hendricks 2008; Levitt and Aligo 2013); and science and engineering (Doorn and Kroesen 2013).

However, there is no single established and vetted framework or set of guidelines for teaching ethics (Paul and Elder 2012; Ryan and Bisson 2011). Yet, there is a deep need for ethical thinking practice and teaching critical skills as part of ethics education (Schrier 2014a, c; Paul and Elder 2012; Elliott 2007). For instance, the skills and processes related to ethical thinking are essential for everyday ethical decisions and also for longer-term, more complex conundrums (Schrier and Kinzer 2009), as well as for twenty-first century societal participation and engaged citizenship. Just as people hone reading, math, or writing skills, or enhance other critical literacy skills, people need to be ethically literate thinkers and decision-makers (Patrick 2003; Jenkins et al. 2006; Kereluik et al. 2013). Kereluik et al. (2013) identifies ethical thinking as a key aspect of twenty-first century learning. Paul and Elder (2012) identify ethical thinking as one of three core critical thinking competency standards, in addition to close reading and writing. Moreover, Elliott (2007) explains that ethical thinking is part of the fabric of everyday life. "Making ethical decisions is part of being human and affects us every day of our lives, and helping us grow as individuals and communally. Decision making in the ethical sphere is woven throughout our everyday life…for self-reflective people, making moral mistakes provides opportunity for growth and development" (Elliott 2007, p. 1).

Finding innovative ways to support ethical thinking practice is becoming increasingly important, particularly as communities, norms, and values rapidly change, and people need to adapt to new contexts (Schrier 2010). For instance, the rise of connected platforms for communication enables the rapid exchange and transformation of values. People need to be able to take on other's perspectives and engage in reflective dialogue as new forms of cultural expression get remixed, retranslated, and redefined (Jenkins et al. 2006). We need to be able to consider alternate perspectives, rethink choices, engage with complexity, question so-called master narratives, and decide what is ethical for them, their communities, and the world at large (Schrier 2010). Nussbaum (2010) explains that people need "narrative imagination. This means the ability to think what it might be like to be in the shoes of a person different from oneself, to be an intelligent reader of that person's story, and to understand the emotions and wishes and desires that someone so placed might have" (Nussbaum 2010).

Is ethics education even effective? Studies have suggested the effectiveness of ethics education when appropriately designed (e.g., Hejase and Tabch 2012; Zgheib 2015), as well as its ineffectiveness under some conditions (e.g., Campbell et al. 2007; Kleinman 2011). The focus of this paper, however, is not to explore the efficacy of ethics education and ethics curricula, either more broadly or in individual disciplines (Ryan and Bisson

2011), or how to use games in ethics education, though these are all worthy pursuits (e.g., see Schrier (2015b) for a framework on using games in ethics education). Rather, in this paper, I want to take the first step in developing a set of design principles or guidelines for games, and specifically RPGs, which could help enable the practice of the skills and thought processes associated with the ethical decision making process. I seek to understand how specific elements and scenarios in *Fable III* may support the practice of ethical thinking skills and thought processes, such as perspective-taking and reflection, to help educators and designers who want to create or use a game or activity to cultivate these skills.

The intersection of games, ethics, and education

Increasingly, games have been considered as practice fields for a variety of skills, literacies and inquiries, in both formal and informal educational contexts (e.g., Gee 2003; Squire 2011; Shaffer 2006; Ferdig and Pytash 2014; Kulman et al. 2014). Over the past 15 years, there has been an expansion in research suggesting the effectiveness of using games for learning and education, as well as in the development and use of games for educational purposes (e.g., Schrier 2014b; Turkay et al. 2014; Wouters et al. 2013). Such games have been labeled with different, often overlapping terms, such as educational games, games for learning, games with a purpose, edutainment, and serious games. For example, "serious games" usually refers to games that support serious purposes, such as health, education, or government needs (Schrier 2016). Any genre of game, such as a first person shooter (FPS), RPG, puzzle game, or point-and-click adventure game could potentially be used for educational purposes, depending on the context, goals, audience, gameplay, and so on. For instance, the *Civilization* series, a commercial off-the shelf (COTS) strategy game, has been translated for educational purposes (Squire 2011), and Civilization EDU, an educational edition of the game, will be released in 2017. Likewise, "sandbox" and "God" games have also been refashioned for educational purposes. *Minecraft* has been used with second graders to help them build virtual replicas of the seven wonders (Weitz 2016) and *The Sims* has been used for language learning (Purushotma 2005). *Mission US*, a point-and-click adventure game has been used for (and explicitly designed for) middle school history education (Schrier 2014d), whereas *Spec Ops: The Line*, a first-person shooter (FPS), *Dragon Age* (an RPG), and *That Dragon, Cancer* (an art game), can arguably be used for ethics education (as I have used them in my college "Ethics and Gaming" course; see also Schrier 2015b).

The specific type or genre of a game used is less important than the notion that games can be used for educational purposes. For example, games have been suggested as effective in literature and literacy acquisition (e.g., Ferdig and Pytash 2014), learning research methods and statistics (Boyle et al. 2014), STEM education (Bertozzi 2014; Werner et al. 2014), music education (Hein 2014), and emotional health education (Vacca et al. 2014). How a game is designed, its goals, the context where it is used, a teacher's guidance and use of the game, and the audience and community playing the game, among many other factors, contribute to the effectiveness of a game for educational purposes (Schrier 2014d).

Research has even suggested that games are significantly useful for learning and retention even over traditional methods of instruction, based on a meta-analysis of games research (Wouters et al. 2013). Games can also potentially enhance curiosity and make content more personally relevant (Hein 2014; Egenfeldt-Nielsen 2006; Williamson and

Facer 2004), particularly if game mechanics are tied to learning mechanics (Plass et al. 2011) and learning is meaningfully tied to short- and long-term game goals (Hirumi et al. 2010). Games are beginning to be used more frequently in formal settings. The Joan Ganz Cooney Center surveyed teachers and found that 9 % of teachers use games every day, 55 % of surveyed teachers use games in their classroom at least once a week, and another quarter of respondents used games at least once a month (Joan Ganz Cooney Center 2014).

The potential of games to specifically enable the practice of skills related to ethical thinking has been cited by a number of researchers (Schrier et al. 2010; Sicart 2009; Consalvo 2005; Zagal 2009, 2011, 2012), and has begun to be empirically investigated (Schrier 2014b, 2012; Schrier et al. 2010, Steinkeuhler and Simkins 2008). For example, Schrier et al. (2010) describe the process of creating a history game for middle school students, *Mission US: For Crown or Colony*, to help motivate social studies skills, including ethical thinking. In particular, they designed an ethical decision related to the Boston Massacre, where students needed to piece together what happened at the event, based on non-playing character (NPC) testimonials and their own unique perspective on the event. They found that the game enhanced skills such as ethical reasoning, empathy, and awareness of ethical issues (Schrier et al. 2010). Likewise, Steinkeuhler and Simkins (2008) consider how RPGs are practice fields for ethical decision-making, however, they focus on how people make decisions (e.g., through a social context), rather than the skills and thought processes used to make those decisions.

When people conceive of using games, or other educational interventions, for ethics education, they often only consider the ways it might indoctrinate players or students with rules on how to act in one specific moment, context, or ethical decision. However, this type of analysis does not consider how games could also elicit the skills and practices necessary to help people navigate ever-evolving ethics-related situations, complicated dilemmas, or problematic questions. In this paper, I approach games, and specifically RPGs, as potential environments that enable the skills and thought processes needed to make complex and quotidian ethical decisions, experiment with mistakes and consequences, and reflect on them such that we can grow and develop as ethical thinkers and citizens. Educators need to understand how to design activities so that students can gain more than just a litany of rules and behaviors on how to act in one stringent scenario; they need critical thinking skills so they can make decisions in an ever-changing world. Moreover, the fixation on whether game playing contributes to social ills, such as online harassment, aggression, or bullying, moves us away from a deeper understanding of the complexity of games, and what we can uncover about how to design better learning environments.

Thus, this study investigates the RPG *Fable III* as a possible activity that elicits ethical thinking, practice, and exploration, and not as a game that is inherently good or bad, ethical or immoral, or violent or nonviolent. This research specifically seeks to understand the design elements of RPGs that may or may not connect to the practice of ethical thinking skills and thought processes, rather than how the game itself influences kids or adults with so-called good or bad values. The goal of this research is to generate a set of design principles or guidelines, which can be implemented in future games and further investigated to analyze how they factor into the practice of ethical skills and thought processes.

While the intersection of games, learning, design, and ethics has been preliminarily considered, it has not been extensively and empirically reviewed. Thus, this study fills a gap by first systematically identifying, categorizing, and analyzing the skills and thought processes employed by male game players when thinking through ethical choices in a commercially-available RPG, *Fable III*, and then using this to uncover initial design

principles, which could be further studied to understand how to better support the practice of ethical thinking through environments such as RPGs.

This study is guided by the following research questions:

1. Do male players practice ethical thinking skills and thought processes in an RPG?
2. Are there differences in how male players make ethical decisions in a scenario in a game context, *Fable III*, versus a written version of the same ethical scenario?
3. Are there differences in how male players make ethical decisions in individual in-game scenarios versus other in-game scenarios?
4. What are the factors that are potentially related to any differences? What design principles could we further test to support ethical thinking practice in subsequent games and activities?

In sum, the purpose of these research questions is to help to better understand how males players work through ethical choices in *Fable III* and to uncover potential design principles that could be further studied and implemented in the design of games and activities for ethics education, rather than to describe the media effects of games, or make broad statements about games, morality, violence, or related issues.

Methods

The ethical thinking skills and thought processes used in an RPG were investigated using a multiple case study with mixed methodologies, including a survey, journaling exercise, and post-activity interview. A control condition was also used.

Choice of game

The Xbox 360 version of *Fable III* (2010), developed by Lionhead Studios, was used as the RPG. *Fable III* was chosen from among other choices because (1) it is a commercially-available, mainstream, and popular RPG (Alderman 2010) that (2) includes ethical scenarios that all game participants would receive. It was also chosen because these scenarios have (3) clear, binary (or sometimes three-part) choices, as well as (4) clear in-game feedback as to the consequences of those choices, such as changes in the moral standing of one's avatar, one's gameplay, and the game world itself. In addition, (5) the game has a mainly linear narrative structure such that all participants must follow, enabling easier comparisons among game participants and between control and experimental (game) groups because all players receive the same set of scenarios in mainly the same order. The *Mass Effect*, *Dragon Age*, *Elder Scolls*, and *Fallout* series, and other *Fable* games were also considered, and *Mass Effect II* was used as a pilot study to test the methodology. While the other games considered and piloted also have an extensive amount of ethical choices, unlike in *Fable III*, there was no assurance that all participants would experience the same core choices.

Participants and research protocol

Both male and female participants were recruited from the New York metropolitan area. Due to the low sample size, this particular study focuses only on the data from the male participants, in part to further minimize differences between the control and game group

participants. The thirty male participants included in this study were ages 18–34 years old, who self-reported as Black or African American (13.33 %), Hispanic or Latino (20 %), White (56.67 %) and Asian or Pacific Islander (10 %). Although there is evidence that there are differences in moral development stage within the age range (Kohlberg 1976), I studied male participants ages 18–34, specifically, because they are perceived to be the key game players of video games and they are considered the target demographic for consoles such as the Xbox 360, even though other players may also play on consoles, and may even be more avid gamers in general (Harwell 2014). This age range and gender were also used because of the requirement of the participant for having access to an Xbox 360, which at the time of the study was the only platform available on which to play *Fable III*. Males, ages 18–34 years old, were much more likely to have access to an Xbox 360, particularly given that they were the target demographic for it, meaning that the results of this study may not extend to that of the general population. None of the participants had ever played *Fable III* prior to the study and were active gamers (defined as someone who plays games for at least 1 h per week).

Participants were randomly assigned into one of two conditions: the control condition (n = 10) or the experimental (game) condition (n = 20). The game condition was split into two sub-conditions (ten participants were randomly assigned to play as a male avatar, and ten participants were randomly assigned to play as a female avatar), and data from all twenty game participants were aggregated for this particular analysis. The data was first analyzed for any differences in skill and thought processes used between those males who were randomly assigned a female versus those males who were randomly assigned a male avatar (Schrier 2012). The results suggested that while there were significant differences in connection to and self-identification with one's avatar, as well as in the *decisions* made when gender was a salient part of a particular ethical decision, the *skills and thought processes used* to reach that decision were not significantly different. Therefore, data from the males assigned as a female avatar and a male avatar were aggregated for this particular study.

Control condition

Participants in the control condition did not play *Fable III* and instead read through written versions of five ethical scenarios based on those from *Fable III* (see Appendix 2 for an example of a scenario). The control condition scenarios were written by the researcher and created by constructing a version of the analogous *Fable III* scenario that kept all of the main details and choices as similar as possible, with the understanding that the game context will be inherently richer, more interactive, and dynamic. As the control condition participants worked through the scenarios, they filled out journal entries, where they explained the ethical decisions they made based on the written story. No rewards or prizes were given to the control condition; rather, the scenarios were presented as a series of mini-narratives with a set of choices ("given this story and situation, what would you do?"), and no consequences or alterations in the narrative were provided based on one's choices. The five journal entries (one for each scenario) invited participants to respond to what they would do in a given situation and why they made their decision. Once the journal entries were submitted, a semi-structured interview was conducted by the researcher, which asked further questions based on the participants' journal entries, overall approach to the scenarios, and general experience with games.

The interviewer also posed an additional ethical scenario (unrelated to *Fable III*) for the participant to verbally work through, with the same prompts and questions as those given

to the game condition participants. See Table 1 for a comparison of the instruments used between conditions.

Game condition

Game condition participants played *Fable III*. While playing the first portion of the game in their own homes, they filled out five journal entries, where they explained in detail any ethical decisions they made, including ones made during any quests, missions, or other in-game activities. The required journal entry question "prompts" were the same in the control and game conditions. Each journal entry was associated with the same segment of the game. For example journal entry #1 was associated with the beginning of the game until the player reached a quest called "The Bowerstone Resistance." (See Appendix 1 for an example of a journal entry). Participants could also optionally provide the date and time of day they played the game and how long their game play lasted.

After playing *Fable III* to a specific point in the game (Day 252 before the "coming threat," which occurs just before the participants decide whether to mine or preserve a lake), all game condition participants were observed in-person by the researcher. Reaching Day 252 in *Fable III* typically ranged from taking 10 to 15 h, depending on one's personal play style, amount of side quests played, and extent of prior game experience.

The participant then played the game, in the presence of the researcher, from Day 252, up until the very end of the game, or Day 0 (completing the remainder of the game typically took from about 45 to 90 min, depending on the speed of the player, but the exact same game content was covered by all participants). During this observation, the participants completed a "talk aloud," or spoke aloud and expressed any attitudes, thoughts, feelings, or explanations they used when making any ethical decisions in the remainder of the game. Prior to the observation, participants were asked to view a short video on conducting a talk aloud. After participants talked through their first ethical decision in the in-person observation, they were given constructive feedback and probed further by the researcher for training purposes. Otherwise, the interviewer did not interact with the participants for the rest of the observation. The observation and talk aloud was videotaped and audio recorded.

Table 1 A comparison of instruments between conditions

Instrument	Control condition	Experimental (game) condition
Pre-activity survey	Yes	Yes
Interaction with ethical scenarios	Yes, using a written (text) version of the game's scenarios	Through the game itself
Journal exercise	Yes, based on the written version	Yes, based on the game version (same questions for both conditions)
Talk aloud and game observation	No	Yes, one portion of the game play was observed and used a "talk aloud" protocol. However, none of the scenarios analyzed in this study were part of this portion of the game play
Post-activity interview	Yes	Yes (same questions for both conditions, same additional ethical scenario)

The rationale for the observation/talk aloud was to (1) ensure that each participant reached the same point in the game, (2) ensure that they each played through the same exact ethical scenarios while being observed by the interviewer, (3) and to enable the participants to externalize their decision-making process, such as their actions, thoughts and practices, *while playing the game*, rather than just after the fact in their journal entry, when further game play or time may have affected what and how their decision-making processes were recalled and described. However, none of the game scenarios analyzed in this particular study were one of those observed during the talk aloud.

Once the game ended, a semi-structured interview (McMillan and Schumacher 2001) was conducted by the researcher. This interview involved walking through decisions from the journal and talk aloud further, and the general evaluation of the game. All game condition participants were also then given an additional ethical scenario (unrelated to *Fable III*) for the respondent to verbally work through (with the same content and prompts as the control condition participants received). See Table 1 for a comparison of the instruments used between conditions.

Pre-activity survey

In addition, all participants finished a survey prior to beginning the game or written scenarios, which included attitudinal and demographic questions. As part of this survey, they responded to five written scenarios, which were analogous to the five written scenarios from *Fable III*, but updated with a contemporary, non-*Fable* context. Participants were also asked to indicate hours of game play per week and check off their favorite game genres, such as racing, puzzle, RPGs, or strategy.

This study followed an IRB-approved protocol, under number 11–104 at Teachers College, Columbia University.

Analysis strategy

In this study, I investigated differences in the same scenario between the game and control condition, and between different scenarios in the game condition. For instance, comparing the same scenario in the game and control conditions potentially enables insight into how the game context, and particular design elements in *Fable III*, might have supported the practice of particular ethical thinking skills or thought processes. However, due to the complexity of games, it is difficult to control for the many variables and design elements. Moreover, due to the small sample size, the study's results should be considered preliminary and all statistically significant results should be investigated further. While the external validity of the study is limited, the design principles generated by the analysis are a useful starting point and should be studied further.

To analyze the specific scenarios, I first investigated which skills and thought processes were used to make a decision in a given scenario, in addition to the decision itself. The reason for understanding this is because I want to be able to look at the ethical thinking *process* as well as the *outcome*, to uncover which behaviors and thoughts are promoted through the game and control contexts, as well as compare them. I also wanted to move the discussion away from whether the game and decisions made were "good" or "bad," and instead to whether the game, its design, and the players' decision-making process exhibited critical engagement. This involved creating a coding scheme to code which particular skills and thought processes were used in each scenario. Skills are defined as any action or behavior conducted or applied to making a decision (e.g., weighing pros and cons).

Thought processes are defined as any act of cognition conducted or applied to guiding a decision in a scenario (e.g., the prioritization of people's feelings or financial resources). I investigated the use of specific skills and thought processes, and I also clustered those skills and thought processes together to understand under what conditions they were more or less frequently performed.

I explored three hypotheses in my analysis. These hypotheses were derived based on results from a pilot study conducted with a different game, *Mass Effect II* (Schrier 2011) and previous research on avatar gender and other ethical scenarios in *Fable III* (Schrier 2012, 2014b).

Hypothesis 1 (H1)   Skills and thought processes are practiced in both the game and written ethical scenarios.

Hypothesis 2 (H2)   No significant differences in the types of skills and thought processes practiced will emerge between the control versus the game condition, when investigating a specific ethical scenario.

Hypothesis 3 (H3)   Significant differences in the types of skills and thought processes practiced will emerge when comparing performance on different in-game ethical scenarios.

Coding scheme

To develop a coding scheme, a literature review was initially conducted to uncover the possible skills and attitudes involved in ethical thinking. One challenge is that while there are many proposed models of ethical decision-making, there is no one comprehensive or empirically validated framework of ethical decision-making or ethical thinking (Rogerson et al. 2011; Cottone and Claus 2000; O'Fallon and Butterfield 2005), and no vetted model for ethical thinking in games or virtual environments (Schrier 2015b). (Discussing ethical decision making models is beyond the scope of this article, but can be further investigated in Cottone and Claus 2000 and O'Fallon and Butterfield 2005).

Thus, to create a preliminary coding scheme, I analyzed a number of definitions of ethics and ethical thinking, using both in vivo (labeling significant words) and thematic coding (Saldana 2011). Overlapping and similar terms were grouped together and then organized into distinct categories (awareness, reasoning, and empathy), which became the list of proposed initial skills and skill categories. For more information on the literature reviewed and the initial model, see Schrier 2011.

My next step was to inductively derive skills and thought processes from the ethical decision-making by the control condition participants and game players of *Fable III*. To do this, I initially analyzed 10 % of the data collected, including 10 % of the 150 journal entries, 30 interview transcripts, and 30 responses to each of the five scenarios on the survey, which was an appropriate set of data to create a preliminary coding scheme, in tandem with the initial model. The initial codes were then continually re-evaluated as the remaining data was coded (Saldana 2011). In other words, even though the initial coding scheme was created from 10 % of the data, I compared all of the remaining data against the initial coding scheme and continued to revise it until the coding scheme was finalized.

To do this, all data was analyzed using in vivo coding, or by coding the specific, distinct words used by the participants (Saldana 2011). Next, the same data were analyzed using thematic coding, which involves applying a general theme to each of the passages. Finally, all words used were consolidated for repetition and those that were too specific to *Fable III*'s game play were discarded. From this emerged a series of words and phrases

associated with the skills and thought processes used during ethical thinking and decision making in *Fable III*.

The words and phrases that emerged were divided into 34 skills and 21 thought processes (see Appendix 4 for the complete list). (More skills and thought processes emerged, but those that seemed too game-specific were not categorized and were not considered in this particular analysis). From the data collected, a revised model emerged that included four general categories rather than the initial three: reasoning-related, empathy-related, reflection-related and information gathering-related skills and thought processes.

For example, skills such as prioritizing goals were marked as reasoning-related skills, as they involved interpreting and analyzing data, evidence, and other information to help make a decision. Skills such as consider another character's emotions were categorized as empathy-related skills, as they involved seeing the world through another's eyes and considering their perceived perspectives (see Table 4 for examples).

Beyond being supported by the data collected in this particular study, these general categories have been further validated by related literature and frameworks, such as Montgomery and Walker's (2012) explanation that reflection skills are also integral to ethical thinking. Likewise, Merriam explains that, "having an experience is not enough to effect a transformation" (Merriam 2004, p. 62), and what is necessary for true learning is changing based on one's reflection on that experience (Merriam 2004; Morris and Wood 2011). We can also look at Jollife and Farrington's notion that empathy is integral to moral development and ethical practice (2006). Noddings (1984) argues that morality is tied to "sentiment of natural caring. There can be no ethical sentiment without the initial, enabling sentiment. ….The second sentiment occurs in response to a remembrance of the first" (p. 244). Reasoning-related skills are also central to ethical thinking, as posited by Lynn (2010) and Khan and McCleary (1996). Reasoning is a primary component of major ethical decision making frameworks, such as Rest's model (1986).

In fact, Rest's model (1986) may also be a relevant touchpoint for the skills that emerged in this study and for understanding the information gathering category. The Rest framework has been applied to ethics curricula (Meng et al. 2014), as well as to ethics games (Staines 2010). Rest's (1986) framework, however, is less an identification of skills, and more a model of the order of steps toward ethical decision-making, which involves gathering information, becoming aware of the issue and its factors, evaluating and reasoning through evidence, and then taking action. Specifically, the framework consists of (1) identifying and becoming aware of the ethical issue, (2) making a judgment or evaluation, (3) becoming focused and motivated toward a specific goal, and (4) implementing an action, based on one's goal (Narvaez and Rest 1995; Meng et al. 2014; Schrier 2015b). Rest also suggests that decision-making derives from the process of reasoning and sifting through evidence to make a judgment *and* from the personal sense of what is right or wrong (Meng et al. 2014). Likewise, the skills and thought processes derived by this study range from reasoning-related to more empathy-related, personal and intuitive, and also involve information-gathering, which inform the first steps in the Rest framework. However, in this study, the skills and thought processes that emerged were not placed in an order to create a step-by-step model of decision-making; but rather, they were viewed as the (sometimes messy) constellation of skills and thought processes used to make a decision.

The 34 skills and 21 thought processes derived became the preliminary coding scheme, which was then tested against another 10 % of the data, and confirmed once the inter-rater reliability between two coders reached at least 80 %, which was attained on the first pass at 86 %. The two coders were highly trained qualitative researchers who also have the

necessary personal attributes for coding, including flexibility, organizational, and creative abilities (Saldana 2012). Once the coding scheme was finalized, all of the data collected were coded, including all journal entries, interview transcripts, and surveys.

Summary of game and scenarios used

Synopsis of Fable III

Fable III is an RPG, which means that the player can shape their role in the game (the avatar or main character) through a series of tasks, activities, decisions, quests, missions, choices, battles, interactions, and other types of game play. In *Fable III* the player starts out as the princess or prince of Albion, depending on if they chose the female or male avatar in the very beginning of the game. The player goes on quests (such as reuniting lovers) and interacts with non-playing characters (NPCs), or computer-controlled characters that are not controlled by another human player. All players reach a point in the game where they can overthrow their in-game brother, King Logan, who has been acting cruelly to the virtual townspeople of Albion.

After overthrowing Logan, the player then becomes the Queen or King of Albion, and the gameplay changes. Now, the players need to make a series of specific decisions on how to rule Albion, such as deciding to preserve or drain a lake, or build an orphanage or a brothel. The player has 1 year, in game time, to make these decisions. The goal is to earn enough money, from their decision and from other actions in the game, to protect the virtual citizens of Albion from a "coming threat." The player must earn one dollar to protect each citizen. Since there are 6.5 million citizens in Albion, they need $6.5 million in their treasury at the end of the year. So-called "improper" or "bad" decisions earn money for the treasury, while so-called "moral" or "good" decisions subtract money.

There are a number of different ways a player's role can change in *Fable III*. For example, players can "level up" their magic ability and fighting ability. There is also a measurement of moral standing in the game, which is based on the actions, decisions and interactions of the player in the game. For example, if a player treats NPCs with respect, and only kills enemies, their moral standing will rise. If, on the other hand, they accidentally or purposely kill an innocent NPC, or make a so-called immoral decision, their moral standing will decrease. Depending on one's moral standing, the avatar's appearance changes, and the world of Albion also adapts. For example, NPCs may treat the character with fear or with admiration, if a player has behaved improperly or properly, respectively, according to the ethical system of the game.

Specific scenarios analyzed

For the purposes of this study, four different specific ethical scenarios were analyzed. Not all scenarios were provided to both the game and written conditions, because (1) I could not predict which scenarios would be discussed by participants in the game, as there were dozens of possible ethical choices in *Fable III* they could choose from among for each journal entry, (2) giving more than five scenarios to the control participants might have been overwhelming in a written context, and (3) some scenarios do not translate clearly from game to a written version (see a comparison of the content of the scenarios used in this study in Table 2; see also Appendix 3 for a summary of the major ethical scenarios and decisions in the game). Three of the scenarios were chosen for this study because they were major ethical choices made in *Fable III* that each participant needs to make. The fourth

Table 2 The four scenarios used

Scenario name	Placement in the game?	Where is the question asked?	Who asks the question?
"Surrender a Friend"	In the beginning, after spending time with Elise/ Elliot	This is asked in the castle, but the main character (avatar) is not King or Queen yet	Brother Logan, who is currently the King of Albion. This is directly asked to the player
"Tax the Parents"	In the second half of the game, after the main character (avatar) has become King or Queen of Albion	This is asked in the throne room by the assistant (a non-playing character (NPC) who asks the player to respond to a number of choices at intervals in the game)	This is directly asked by an NPC who acts as an assistant to the King or Queen of Albion
"Walter"	In the middle of the game, right at the end of a mission that is conducted with Walter, an NPC, who acts as a mentor for the main character	In a cave, where Walter has led the main character (the player) to practice missions so he/she can become the King or Queen of Albion	No one directly asks the question, but the game makes it clear that you have a choice to leave Walter behind or continue to pull him along
"Drill"	This is not part of the game, but asked by the interviewer	This is asked to all participants during the interview	The interviewer asks this question verbally to all participants

scenario was used as an additional scenario given by the interviewer, and does not appear in the game. This was included to understand how all participants worked through an out-of-game scenario. (See a comparison of the scenarios by condition in Table 3).

Scenario 1 "Surrender a Friend"

The "Surrender a Friend" scenario takes place right in the beginning of *Fable III*. The prince or princess avatar meets his/her childhood friend, named Elise or Elliot (whichever is the opposite gender). After spending a brief time interacting with the friend, the friend is captured alongside three villagers by the evil King Logan. Participants are asked to either sacrifice a friend or sacrifice the villagers—and they are constrained by these choices. In

Table 3 The scenarios analyzed in this article, by condition

Name of scenario	Control condition	Game condition
Surrender a Friend	Present, in the journal	Present, discussed in the journal
Tax the Parents	Present, in the journal	Present, discussed in the journal
Walter	Not present	Present
Drill	Present, verbally provided during the interview	Present, verbally provided during the interview

the game version, if participants do not choose or the participant takes too long to choose, then both people are killed. Control condition participants do not have this option. In the game scenario, Elise/Elliot begs to be sacrificed.

Scenario 2 "Tax the Parents"

The "Tax the Parents" scenario, which takes place on Day 294, occurs once the player is the King/Queen of Albion. The participant must decide what to do with a current tax on people in Albion who have children. Often in *Fable III*, decisions take place in a throne room, and a crowd of non-playing characters (NPCs) watches the King/Queen make the decision and they react to it. Instead, this choice is presented by the assistant, Jasper, in the treasury room, and no other NPCs are present for it. The participant must decide among three choices: (1) raise the tax on parents, which will earn $200 K; (2) keep the tax the same, and have no financial difference; or (3) give benefits to people with children, and lose $200 K.

Scenario 3 "Walter"

The "Walter" scenario occurs in the middle of the game. Walter is the mentor of the prince/princess. At one point in the game, an enemy has blinded Walter, so the prince/princess needs to drag Walter out of a cave and toward safety. Dragging him involves holding down a game button and moving extremely slowly, which is very frustrating for the player. Once the player reaches the end of the cave, Walter collapses and explains that he cannot go any further. Now, the player must decide whether to continue to drag Walter across a desert or leave him behind. Walter begs to be left alone.

Scenario 4 "Drill"

The "Drill" scenario does not appear in the game or the written scenarios, but was provided to all participants during the post-activity interview. Participants were told to imagine they are working at a company that it is auctioning off old equipment to its employees. While working, the participant observes a fellow employee, 2 months from retirement, slipping a drill into his car. The participant is then prompted to talk through his decision-making process and what he would do in the situation.

Results

To help organize the results, I have provided them by hypothesis.

Hypothesis 1 (H1) Skills and thought processes are practiced in both the game and written scenarios.

The participants in both the control and game conditions used a variety of skills and thought processes (see Table 4 for examples of the skills and thought processes used and see Appendix 4 for the full list of 34 skills and 21 thought processes). This finding is not surprising, as both conditions involved interacting with or reading ethical scenarios. We could assume that interaction with any ethical scenario (whether in a game or written

Table 4 Examples of ethical skills and thought processes used in the study

Type	Skill or thought process	Category
Perspective-taking/consider someone's perspective	Skill	Empathy-related
Consider another's feelings or emotions	Skill	Empathy-related
Search for other opinions	Skill	Information-related
Interpret rules and regulations	Skill	Reasoning-related
Weigh different options	Skill	Reasoning-related
Identify pros and cons	Skill	Reasoning-related
Consider other media experiences (television/film/other games besides *Fable III*)	Skill	Reflection-related
Consideration of consequences	Skill	Reasoning-related
Prioritize another's perspectives when making a decision	Thought process	Empathy-related
Prioritize greater good over individual interests	Thought process	Reasoning-related
Assess past events within a game as predictive of the future	Thought process	Reflection-related

version) would encourage the practice of skills associated with thinking through those dilemmas (e.g., O'Fallon and Butterfield 2005). Thus, H1 was supported by the results.

However, regardless of the actual results, a *perception* emerged that the game condition would have involved less practice of ethical thinking and skills. 70 % of control condition participants reported that a game version of the same (written) ethical scenarios would have required less thought and 80 % believed it would be easier to play the scenarios in a game.

Hypothesis 2 (H2) No significant differences in the types of skills and thought processes practiced will emerge between the control versus the game condition, when investigating a specific scenario.

To analyze this hypothesis, I will compare the control condition and game condition on three scenarios, "Surrender a Friend," "Tax the Parents," and "Drill."

"Surrender a Friend"

Frequency counts were derived and Fisher's Exact Test was conducted to note any significant differences in the ethical thinking skills and processes in how the control group participants thought through the written version of "Surrender the Friend" versus how the game group participants thought through the game version of "Surrender a Friend."

There was no significant difference between the use of one or more empathy thinking skill in the control versus game group on this scenario; same with the use of one or more reasoning skill and one reflective thinking skill. There was a significant difference in one or more information gathering skill in the control (6/10) versus game condition (4/20) ($p = 0.0449$). There were significant differences found on six skills and one thought process and one directional difference found on one skill (see Tables 5 and 6) (Weisstein 2015).

"Tax the Parents"

Frequency counts were derived and Fisher's Exact Test was conducted to note any significant differences in the ethical thinking skills and processes in how the control group participants thought through the written version of "Tax the Parents" versus how the game group participants thought through the game version of "Tax the Parents."

There was no significant difference between the use of one or more empathy thinking skill in the control versus game group on this scenario; same with the use of one or more reasoning skill and one or more reflective thinking skill. There was a significant difference in one or more information gathering skill in the control (7/10) versus game condition (0/20) ($p < 0.0001$). There were significant differences found on five skills and one directional difference found on one skill and on two thought processes (see Tables 7 and 8).

"Drill"

Frequency counts were derived and Fisher's Exact Test was conducted to note any significant differences in the ethical thinking skills and processes in how the control and game group participants thought through the "Drill" scenario, which was the same for all participants.

Table 5 These are skills that are shown to be significantly or directionally different for the participants on "Surrender a Friend" in the control versus game conditions

Skill	Frequency on control version	Frequency on game version	Significance	Type of skill
Search for other opinions from characters in the scenario	3/10	0/20	$p = 0.0296$ (significant)	Information-related
Want to gather information not included in the scenario	3/10	0/20	$p = 0.0296$ (significant)	Information-related
Assess how choices depend on new information	3/10	0/20	$p = 0.0296$ (significant)	Information-related
Consider other's emotions or feelings	9/10	7/20	$p = 0.0067$ (significant)	Empathy-related
Consider one's own emotions	6/10	4/20	$p = 0.0449$ (significant)	Empathy-related
Assessment of another's character or personhood	9/10	10/20	$p = 0.0485$ (significant)	Empathy-related
Assess relationship with another character/people	10/10	13/20	$p = 0.0637$ (not significant, but a trend)	Empathy-related

Table 6 This is the thought process that is shown to be significantly different for the participants on "Surrender a Friend" in the control vs. game conditions

Thought process	Frequency on control version	Frequency on game version	Significance	Type of skill
Prioritization of relationships to help make decisions	7/10	5/20	$p = 0.0450$ (significant)	Empathy-related

Table 7 These are skills that are shown to be significantly or directionally different for the participants on "Tax the Parents" in the control vs. game conditions

Skill	Frequency on control version	Frequency on game version	Significance	Type of skill
Conduct a cost/benefit analysis	7/10	0/19*	$p = 0.0001$ (significant)	Reasoning-related
Wants to gather information not included in the scenario	6/10	0/19	$p = 0.0004$ (significant)	Information-related
Choices depend on new information	5/10	0/19	$p = 0.0021$ (significant)	Information-related
Wanting new information	5/10	0/19	$p = 0.0021$ (significant)	Information-related
Financial assessment/consider financial implications	10/10	11/19	$p = 0.0265$ (significant)	Reasoning-related
Perspective-taking, consider someone else's perspective	2/10	12/19	$p = 0.0502$ (not significant, but a trend)	Empathy-related

* One game participant did not discuss this scenario

Table 8 These are thought processes that are shown to be directionally different for the participants on "Tax the Parents" in the control versus game conditions

Thought processes	Frequency on control version	Frequency on game version	Significance	Type of skill
Prioritization of greater good over individual interests	0/10	6/19	$p = 0.0619$ (not significant, but a trend)	Reasoning-related
Prioritization of safety and people's lives over all other factors	5/10	3/19	$p = 0.0834$ (not significant, but a trend)	Reasoning-related and empathy-related

There was no significant difference between the use of one or more empathy thinking skill in the control versus game group on this scenario; same with the use of one or more reasoning skill, one or more information gathering skill, or one or more reflective thinking skill. There was a significant difference in one or more information gathering skill in the control (6/10) versus game condition (4/20) ($p = 0.0449$). There were significant

differences found on two skills and one thought processes and one directional difference found on one skill and one thought process (see Tables 9 and 10).

Based on the analysis of the three scenarios, H2 was not entirely supported. While most skills were not significantly different, there were a few skills and thought processes that were significantly different, as described above.

Thus, few significant differences emerged in the use of specific skills or thought processes by control and game participants in analogous scenarios. As a follow-up, I also analyzed whether significant differences emerged if we examined and compared the entire control and game experience. While the use of most skills and thought processes, in aggregate, were not significantly different between the two conditions, some trends emerged, as follows.

Discussion with real people

First, I looked at whether a participant turned to a friend, colleague or family member for help while working through the ethical scenarios. In the control condition, no participants ever discussed the ethical scenarios with real people. In the game condition, 50 % of the participants did reach out to a real person to support their decision making at some point during their game play. However, if we compare the skill "Discussion with real people" between the control vs. game participants in one single scenario, "Surrender a Friend," the difference is not significant (see Table 11).

Consideration of consequences, long-term outcomes, and choices

One of the most frequently used skills in the game condition was the "consideration of consequences" (90 % of participants used this skill at some point in the game). Related to this is another skill, the consideration of long-term outcomes (or the consequences beyond what is explained or experienced directly in the scenarios). However, if we compare the skills "Consideration of consequences" and "consideration of long-term outcomes" between the control vs. game participants in one single scenario, "Surrender a Friend," the difference is not significant (see Table 11). Moreover, unprompted, 25 % of game participants explained that they felt constrained by the choices in the game, and 55 % of game participants, unprompted, explained that they searched for alternate choices not available in the game's scenarios. Control condition participants did not report this.

Table 9 These are skills that are shown to be significantly or directionally different for the participants on "Drill" in the control vs. game conditions

Skill	Frequency on control version	Frequency on game version	Significance	Type of skill
Weigh different options	5/10	18/20	$p = 0.0256$ (significant)	Reasoning-related
Consideration of what is right or wrong	0/10	8/20	$p = 0.0288$ (significant)	Reasoning-related, empathy-related
Consider other's feelings	0/10	5/20	$p = 0.1400$ (not significant, but a trend)	Empathy-related

Table 10 These are thought processes that are shown to be significant or a trend for the participants on "Drill" in the control vs. game conditions

Thought processes	Frequency on control version	Frequency on game version	Significance	Type of skill
Problem solve from another's perspective and use it to make one's decision	3/10	15/20	$p = 0.0450$ (significant)	Empathy-related
Prioritization of safety and people's lives over all other factors	5/10	3/20	$p = 0.0778$ (not significant, but a trend)	Reasoning-related and empathy-related

Table 11 Specific skills compared across the control and game conditions of "Surrender a Friend"

Skill	Frequency in control	Frequency in game
Discussion with real people	0/10	3/20
Consider past events	1/10	6/20
Consideration of consequences	9/10	19/20
Consideration of long-term outcomes	1/10	7/20

None of the results were significant

Length of decisions and consideration of past events

Without prompting, 11 of the game participants (55 %) explained that at some point during their game, they deliberated over at least one of the decisions for what they considered to be a lengthy period of time. Two game participants even admitted (unprompted) to restarting their game at a point in the game to change a decision, and 50 % explained that there was at least one decision they wanted to change after they saw how the consequences played out. None of the control participants reported this. However, if we compare the skill "Consider past events" between the control vs. game participants in one single scenario, "Surrender a Friend," the difference is not significant (see Table 11).

Hypothesis 3 (H3) Significant differences in the types of skills and thought processes practiced will emerge when comparing performance on different in-game scenarios.

To analyze this hypothesis, I will compare the skills and thought processes used by the game participants on two game condition scenarios, "Surrender a Friend" and "Walter" as they both involve deciding whether to sacrifice a friend. I will also compare two other game condition scenarios, "Tax the Parent" and "Walter," as they both appear in the middle of the game, and they are distinct in theme, as one is financial-focused, while the other is more interpersonal-related. Despite the fact that the content of the scenarios being compared are quite different, I believe the comparison is warranted to potentially show that any differences in scenarios may be connected to differences in content, design, context, thought, and action, rather than to the medium itself (game, book, movie) dictating how people will act, feel, and think.

In the game condition, 25 % of the participants chose to save their friend (over the villagers) whereas 90 % of the participants (18/20) chose to save Walter (over leaving him behind), and this was significant, $p = .0001$, using Fisher's Exact Test. The choices in the two scenarios, "Walter" and "Surrender a Friend," are not entirely analogous, however, as in "Walter," you are not choosing between sacrificing Walter and other NPCs, but rather, you are choosing to save Walter versus putting your own avatar in more danger.

Frequency counts were derived and Fisher's Exact Test was conducted to note any significant differences in the ethical thinking skills and processes in how the game group participants thought through the "Surrender a Friend" scenario and "Walter" scenario. There were significant differences found on one skill and one thought process and directional difference found on two skills and three thought processes (see Tables 12 and 13).

Frequency counts were derived and Fisher's Exact Test was conducted to note any significant differences in the ethical thinking skills and processes in how the game group participants thought through the "Tax the Parents" scenario and "Walter" scenario. There were significant differences found on six skills and seven thought processes (see Tables 14 and 15).

Based on the limited analysis between game scenarios "Walter" and "Surrender a Friend," and "Walter" and "Tax the Parents," the hypothesis is supported, to some extent. While most skills and thought processes were not significantly different, there were a few skills and thought processes that were different, as described above, particularly for the more distinct (in theme, details, content) scenarios.

Discussion

The purpose of this study was to explore the possibility of a commercially-available game, *Fable III*, as supporting the practice of ethical thinking skills and thought processes, and to use an analysis of this game and comparison with a control condition to help elicit design principles that could be applied to future learning activities and further studied. The results suggested that RPGs with ethical scenarios, such as *Fable III*, are potential environments for the practice of ethical thinking and skills, alongside other possible environments, such as text-based ones. In other words, games themselves may also be legitimate sites for the practice of ethical reasoning, reflection, information gathering, and empathy skills and thought processes. This finding may not appear surprising given the burgeoning research

Table 12 These are skills that are shown to be significant or a directional trend, for the participants on "Surrender a Friend" versus "Walter"

Skill	Frequency on "Surrender"	Frequency on "Walter"	Significance	Type of skill
Consider another's character or values	10/20	18/20	$p = 0.0138$ (significant)	Empathy-related; Reasoning-related
Discuss/consider one's emotions	4/20	10/20	$p = 0.0958$ (not significant, but a trend)	Empathy-related
Consider past events in the game/scenario	6/20	13/20	$p = 0.0562$ (not significant, but a trend)	Reflection-related

Table 13 These are thought processes that are shown to be significant for the participants on "Surrender a Friend" versus "Walter"

Thought processes	Frequency on "Surrender"	Frequency on "Walter"	Significance	Type of skill
Prioritization of relationships to help make decisions	5/20	16/20	$p = 0.0012$ (significant)	Empathy-related
Imagining what if scenarios and possible consequences to justify decision	11/20	16/20	$p = 0.1760$ (not significant, but a trend)	Reasoning-related
Liking a character/person as a reason for doing something	3/20	9/20	$p = 0.0824$ (not significant, but a trend)	Empathy-related
Judgment that someone is a friend/romantic partner influences decision	4/20	9/20	$p = 0.1760$ (not significant, but a trend)	Empathy-related

Table 14 These are skills that are shown to be significant for the participants on "Tax the Parents" versus "Walter"

Skill	Frequency on "Tax the Parents"	Frequency on "Walter"	Significance	Type of skill
Consider/assess of another's character	4/19	18/20	$p < 0.0001$ (significant)	Reasoning-related; empathy-related
Discuss/consider one's emotions	2/19	10/20	$p = 0.0138$ (significant)	Empathy-related
Consider past events in the game	3/19	13/20	$p = 0.0031$ (significant)	Reflection-related
Financial assessment	11/19	0/20	$p < 0.0001$ (significant)	Reasoning-related
Consider relationship with another character/person	2/19	17/20	$p < 0.0001$ (significant)	Empathy-related
Reflection after decision	0/19	10/20	$p = 0.0004$ (significant)	Reflection-related

on the efficacy of well-designed games in education. Yet, we cannot take this supposition for granted, as 70 % of the control condition participants—who are avid game players— explained that a game version of the same (written) ethical scenarios would have required less thought, while 80 % believed it would be easier to play the same scenarios in a game.

The categories of skills and thought processes used by participants in the game and control conditions were not analyzed more generally (e.g., reflection-related, empathy-related) in this particular study, but have been in a previous study (Schrier 2015a). According to those results, participants in the game employed reasoning-related skills and thought processes most frequently out of all skill types (Schrier 2015a), but also regularly used reflective thinking and empathy-related skills throughout the game. These results are echoed in Zagal's (2011) discussion of how games motivate ethical reflection and Belman and Flanagan's (2010) discussion of games and empathy.

Table 15 These are thought processes that are shown to be significant for the participants on "Tax the parent" vs. "Walter"

Thought processes	Frequency on "Tax the Parents"	Frequency on "Walter"	Significance	Type of skill
Prioritization of relationships to help make decisions	1/19	16/20	$p < 0.0001$ (significant)	Empathy-related
Liking a character/person as a reason for doing something	0/19	9/20	$p = 0.0012$ (significant)	Empathy-related
Judgment that someone is a friend/romantic partner influences decision	0/19	9/20	$p = 0.0012$ (significant)	Empathy-related
Prioritization of greater good over individual interests	6/19	0/20	$p = 0.0083$ (significant)	Reasoning-related
Evaluating long term results over short term results	7/19	1/20	$p = 0.0197$ (significant)	Reasoning-related
Prioritization of financial/resource gain	8/19	0/20	$p = 0.0012$ (significant)	Reasoning-related
Decision based on the evaluation of future value of a person or people as a resource	0/19	10/20	$p = 0.0004$ (significant)	Reasoning-related

When comparing frequencies in the use of specific skills and thought processes in analogous scenarios between the written (control) and game condition, there were few significant differences found and in both conditions, participants practiced many different skills and thought processes. The frequent and diverse use of skills and thought processes by participants in *both* conditions, limited significant differences between analogous scenarios, and limited differences among game scenarios, suggest that both games and text-based environments, and a variety of scenario types, may be used to support ethical thinking practice.

One initially surprising finding is that control participants more frequently used empathy-related skills, such as considering their relationship and considering their emotions in the "Surrender a Friend" scenario. This would suggest that players were less attached to their digital "friend," Elise/Elliot, and this was self-reported by participants. One game participant explained that, "I had no attachment to the character's bf, because he literally was only in a few scenes in the beginning. Attachments usually grow with time. I would think by the end of the game, if I had to chose between my dog dying or a group of people, I would probably pick my dog." Another participant explained that, "All of my interaction with Elliot so far, I've really only had three or 4 min of experience with Elliot prior to killing him off, so I didn't have an established relationship with him like I have with a lot of these characters now."

From these results, we might erroneously extrapolate that game participants exhibited less empathy-related skills in general in the game. However, in the Walter scenario, a digital "friend" that they spent over 10 h with, players used emotion, assessed his character, considered their friendship with him, and they took on his perspective to make their decision. One game participant explained that, "Over the course of the game, I formed an emotional attachment to Walter's character. I never even gave a thought to leaving him behind, even though he was practically begging me to."

One possible reason for this discrepancy is that control participants were more able to imagine a real friend and put that friend into the "Surrender a Friend" scenario. Game

participants, however, did not yet have enough time to form an attachment to Elise/Elliot and therefore, were not as frequently focusing on their relationship or using empathy-related skills (In "Surrender a Friend," game participants had only interacted with the friend NPC for 10–15 min; on the other hand, after spending almost 10 h with Walter, another NPC, they became attached to him and reported that they cared about his well-being). Once game participants had enough time to form a relationship with an NPC, such as Walter, they were more frequently considering the relationship and using empathy-related skills. We might then hypothesize that game participants more frequently used empathy-related skills and thought processes with NPCs when they had the opportunity to build a relationship with those NPCs over time. This hypothesis should be analyzed further empirically.

Moreover, game participants used empathy-related skills more frequently than control participants when people were not as directly involved in a decision or scenario, such as in "Tax the Parents." For instance, control participants regularly treated this scenario as a cost-benefit analysis, and analyzed the pros and cons of raising taxes. Game participants did not just think about the financial aspects of the dilemma, but they also considered how people would be affected, and also thought about outcomes that were not directly discussed in the scenario. Game participants also used one empathy-related thought process more frequently than control participants did in the "Drill" scenario (the scenario that was not game-related, and was the additional scenario provided to them during the interview).

Comparing the thoughts and skills used between different scenarios, even if those scenarios are not entirely analogous, is important because it moves the conversation from "can games elicit ethical thinking at all?" to "what specific types of action, thoughts, and feelings are elicited by specific types of scenarios and design elements in games?" We might expect that scenarios that involve specific individuals or are directly related to groups of people, whether "imagined friends" in the case of the written scenario, or NPCs, in the case of the game scenario, would also connect to a more frequent use of empathy-related skills, rather than solely reasoning-related skills. This is suggested in the findings. In "Walter," the two highest frequently used thought processes for this scenario were "prioritization of relationships to help make decisions," (16/20) "imagining what if scenarios" (16/20) and "making a decision based on an evaluation of the future value of a person" (10/20)," two empathy-related thought processes and one reasoning-related. In "Tax the Parents," the three highest frequency thought processes used by game condition participants are "imagining what if scenarios," (16/19) "thinking about the larger system and how one's actions would affect it" (8/19) and "prioritizing financial gain when making a decision" (8/19), all reasoning-related thought processes.

Furthermore, although there were many similarities in how game participants used skills and thought processes between the "Walter" and "Tax the Parent" scenarios, there were more significant differences in how the participants thought through the "Walter" and "Tax the Parent" scenarios than in any other comparison in this study. This may be because the nature of the scenarios, in that the "Walter" (interpersonal) and "Tax the Parent" (financial) scenarios were more distinct than, for example, "Walter" (interpersonal) and "Surrender a Friend" (interpersonal). Thus, we hypothesize that the *design of an ethical scenario* (such as differing questions, content, characters, details, gameplay, goals, and choices) may affect which skills people practice, more so than the *medium* (game vs. written) of the learning environment. A greater diversity of scenarios should be investigated, as well as controlling for particular factors and design elements, to understand how any specific design elements may affect how people respond to ethical choices in games.

Therefore, I believe further inquiry into specific design elements or principles is warranted, and I have proposed four principles that can be further empirically studied to understand how to better support ethics practice and learning.

Proposed design principles

In this section, I consider four hypothesized design principles that emerged from this analysis of *Fable III*, which may help us better create future activities and experiences for learning and practicing ethical thinking, and which should be investigated further. Again, these design principles are preliminary and should be empirically tested to understand the specific relationship with the practice of ethical thinking skills and thought processes.

Enable the cultivation of relationships, even virtual ones

Relationships, emotions, and empathy matter in ethical decision-making. Gilligan (1982) explains how care is a component of moral thinking, and that people's relationships and connectedness with others affects how people work through ethical decisions. In other words, caring for, and nurturing our relationships do matter in how we make ethical decisions (Noddings 2003, 2010). This is important to emphasize because we may erroneously privilege reasoning skills as being more essential to ethical thinking, or design learning activities that just take into consideration the skills and thought processes related to reasoning or information gathering. We also need to consider how to translate this to a game or other learning activity, where you are not necessarily forming relationships with real people, but possibly NPCs or virtual characters.

Based on the results from *Fable III*, players considered relationships with NPCs in the game when working through ethical decisions, particularly ones that were interpersonal in nature. We can compare two of the game scenarios, "Walter" and "Surrender a Friend," to understand how closeness of a relationship may affect the types of skills and thought processes used. After 10 h with Walter, participants were hesitant to leave Walter behind, despite the difficulty of staying with him in the game. Only two participants out of the twenty decided to leave him behind. Despite Walter being a digital creation, players felt that they developed a deep relationship with him and that it was their turn to take care of him, support him, and make sure he was safe.

On the other hand, in the "Surrender a Friend" scenario, participants only had spent a few in-game minutes with Elise/Elliot and, likewise, did not report as much attachment to the NPC. Subsequently, participants were more split in whether to sacrifice the friend, but this may have been due to the difference in the choices (in "Surrender a Friend" the alternative was to sacrifice three villagers). While the "Walter" and "Surrender a Friend" scenarios are different, the results suggest that the participants needed more time to build a relationship with the NPC to factor that relationship into their decision process. On the other hand, in a particular educational activity there might be value in learners not knowing an NPC well at first and practicing ethical skills when someone is unfamiliar, just as we might encounter in real life. For example, a game might be designed to enable the player to think through initial and subsequent ethical decisions related to an NPC who becomes a friend over time, and to reflect how that might translate to real-world interactions with strangers and friends.

We can also look at differences between the more interpersonal-related Walter scenario and more financial-related Tax the Parent scenario to reveal how the nature of a scenario may elicit more empathy-related skills and thought processes. It is important to note,

though, that although the Tax the Parent scenario is financially-focused, people in the game more frequently took other's perspectives than in the control condition, so a game context, in addition to the scenario's details, may help to elicit more perspective-taking and possibly other empathy-related skills and thought processes, which should be researched further.

Enable the exchange of ideas and perspectives

Even if people do not directly play with others in a game, it is important to find ways to motivate the exchange of ideas and perspectives, either among real people and NPCs, and within the game and outside the game. This is a type of argumentation that is essential to ethical thinking, where people can explore different viewpoints and integrate them into their own (Klein 2012), or what Nussbaum calls a "critical, elaborative discourse" (2008, p. 347).

In *Fable III*, for many of the decisions about how to rule over Albion, the player was able to listen to two different perspectives. One NPC, Reaver, typically supports the so-called "bad" decision, while Paige, another NPC, typically supports the so-called "good" decision. (Control participants did not have these specific characters providing the differing perspectives, but rather these perspectives were written directly into the scenario). These differing perspectives helped guide the player to think through the sides of an issue, and to weigh potential pros and cons and consequences. These perspectives were also personal; sometimes participants made their decision because they liked or felt loyal to a particular NPC (such as Walter or Paige), or did not want to align with the NPC they disliked (such as Reaver).

People need to have opportunities to connect with and listen to perspectives from NPCs, but also real fellow players and collaborators. For example, some of the game participants noted that they asked friends and family members for advice. One game participant regularly talked through the *Fable III* decisions with his wife, another talked to his roommates, another looked at forums online to help him think through his decisions, while another called his dad when a decision was particularly complex. None of the control participants noted reaching out to outside people to help them think through their decisions.

Moreover, game participants also more frequently than the control participants made decisions in the additional Drill scenario by problem solving from someone else's perspective. Alongside previous findings about game participants seeking outside help from one's social network, and previous research on argumentation and multiple perspectives, this finding suggests that the game might encourage the practice of social and interpersonal skills related to ethical thinking. Understanding which specific game elements spurred players to reach out to others will help when designing future learning initiatives.

Finally, the exchange of ideas and experimentation with varied perspectives should also feel safe and not lead to dire real-world consequences. Players should not be afraid to consider alternative viewpoints, try on less desirable identities, ask questions, pose opinions, or ask outside peers and family members for help. For example, participants in *Fable III* could make less typically desirable choices, such as building a brothel or forcing children to be laborers. Giving students the opportunity to make controversial choices, or to see through the eyes people with other types of value systems, can be useful, so long as these choices are scaffolded and contextualized properly. However, any consequences for students in choosing the so-called negative choice should be contained within the game, and not lead to consequences outside the game. No student should worry that they will be

bullied, excluded, teased or penalized in class because they wanted to experiment within the game's system, whether with so-called "good" or "bad" choices, or anything beyond.

Provide appropriate, meaningful feedback

Well-designed games, by definition, are typically good at providing feedback (Gee 2003; Salen and Zimmerman 2003). Whether in the form of points, fails, or cheers, games, by their very nature, need to show a player what is expected of them to be able to complete its goals. One issue with feedback, however, is that it can be too simplistic and lack the complexity of real life problems and possibilities.

In *Fable III*, consequences to decisions were relayed, in part, through an in-game morality system, as well as in how NPCs treated the player, or how the fictional world of Albion changed as a result of the player's choices. For example, game participants get a morality rating that is affected by each ethical choice that is made in the game, which results in avatar appearance changes, such as diabolic or angelic wings, or how other NPCs treat him or her. One of the benefits of clear, direct and consistent feedback, even in a simplistic format (such as karma points, a moral standing meter, or changes in appearance), is that it clearly communicates the game's value system and enables the player to reflect on how their choices affect the specific system of the game, and the imaginary world of Albion. (All game participants in this study finished the game on the "good" side of the morality meter.)

In *Fable III*, when deciding among choices, game participants regularly considered the direct consequences (90 % of game participants considered consequences at some point in the game, such as the aforementioned change in karma points), and they also considered longer-term and indirect outcomes. For example, 35 % of game participants in "Tax the Parents" imagined consequences and outcomes from scenarios that even the game itself did not simulate, and were beyond the current capabilities of any game to simulate. On the one hand, this shows the possibility of even a simple game to spark one's imagination and the consideration of consequences and what ifs. This speaks to the ability of game to encourage "systems thinking"—systematically and holistically about how a problem and how a choice may affect the world dynamically, rather than just as a simple cause and effect—essential for ethical decision-making (Kunsch and Brans 2007). On the other hand, this finding may suggest that the game's feedback (and simulation of an ethical decision's consequence) did not meet their expectations. Participants reported that the inability of the game to illustrate and generate their imagined consequences affected their readiness to imagine complex outcomes in future scenarios (three game participants reported this without being asked directly).

The limitation of experiencing only direct, linear consequences in *Fable III* also goes hand-in-hand with the limitation of being given only "black and white" ethical choices in the game. Players reported that the limited in-game options constrained their thought process and did not feel authentic to them (25 % of game participants reported this without being directly asked). This research suggests that we may want to enable learners to not just experience the black and white choices, but more nuanced or "gray" possibilities. This is further echoed by 50 % of game participants (without being directly asked), who explained that the "Surrender the Friend" was the most difficult ethical question in the game, in part because there was no obvious "good" choice.

Moreover, the game's choices and consequences should be meaningful, for the player, as well as for the game's context and/or a context outside of the game. The players need to care about the game, its characters, and what happens in the game based on their actions in

it. If the consequences are not personally meaningful or effective, or do not matter in the game world or in the perspective of the player, there is less pressure or motivation to make a decision (Sherman and Kurshan 2005; Deci 1996; Thomas et al. 2003). These findings are echoed in Simkins (2011), who suggested that players need clear and appropriate consequences based on one's behavior, in part to strengthen the effect of one's ethical decisions; otherwise, participants may not consider their decisions as ethically relevant (Simkins 2011).

Personally meaningful choices and consequences can also be motivating. For example, one game participant was in the middle of adopting a child during the study, so having the opportunity to build an orphanage was meaningful to him both inside and outside of the game world and factored into his decision (this scenario was in the game but not analyzed in this study). Another participant, at one point in the game, accidentally murdered an innocent townsperson because his weapon was not locked properly. After that incident, his NPC child kept asking him why he shot an innocent person, which deeply affected him. He was extremely careful from then on to always lock his weapon and not harm anyone who was a so-called "good" character in the game.

One of the challenges to providing appropriate feedback is that simulating the consequences of a complex and nuanced decision is very difficult unless there are clear inputs and outputs. When designing an activity such as a game, it is extremely time-consuming and expensive to design, write, and program so many different choices and consequences, because you need to create all of those possibilities, as well as any successive possibilities, and any further complexities down the road. Simulating all of these appropriately is a huge design and computational task, so it is more efficient to find ways to creatively provide just enough context and content for the player to feel they are authentically experiencing choices and consequences. Designers should consider how to find a balance between providing enough meaningful choices, while also allowing for the player's imagination to fill in the gaps. Providing opportunities for social interaction and user-generated content around the game and within the game could add to the authenticity, while keeping the production and design viable.

Finally, assessing a player's ethical decisions in a game, and then relating these results to the player in an engaging way is challenging. By giving any type of game feedback, the designer is required to create and enforce a specific, quantified moral system for the game, rather than allow for open-ended deliberation and consequences. Game designers need to put values on specific ethical decisions if they want to be able to provide clear feedback to the player. For example, if you get positive moral points for lowering taxes on parents, but also lose money, this provides feedback to the player on what types of behavior the game's system values and how it values it (such as with cash or moral standing). Designers should consider how to provide clear consequences and feedback to the player, while also enabling complexity and meaningfulness, to help in providing built-in metrics for teaching, learning, and assessment purposes.

Enable iteration

Designers should consider how we can encourage learners to try out a variety of choices and consequences—the so-called good ones, bad ones, and everything in-between—as well as alternative identities, statuses, beliefs, systems, and values.

One way to do this may be to enable players to go through ethical scenarios in multiple ways or to replay scenarios to try out different outcomes. Eleven total study participants (out of thirty) explained, without being directly asked, that they often play games first as a

"good" or hero character, and then replay the entire game as a so-called "bad" character, and make the negative choices. One issue with this is that it takes so long to go through the entire *Fable III* experience—at least 12 h—so it would be difficult to compare the consequences of different decisions side-by-side. However, a learning activity could be designed to allow quick iteration and the ability to replay different decisions and outcomes to see what could have been. 50 % of game participants acknowledged that they would have liked to replay one of the decisions after experiencing a consequence, and two even restarted the game to redo a decision. *Fable III* participants were not always able to do this, which is a lost opportunity for learning.

Another way to do this is to use multiple formats, which enable learners to step outside themselves and their preconceived notions and myths. For instance, in this study I compared how participants thought through an ethical scenario in a text-based versus a game environment. Although participants used a variety of skills and thought processes in both conditions, those in the text-based one believed that a game version would not have comparably encouraged the practice of ethical thinking. Most of the control participants (70 %), all of whom are frequent gamers, explained that if they were to have experienced the same ethical scenario in a game (as they did in the written version), they would have applied less and more superficial thought and practiced fewer skills. However, this belief is unfounded by this study, and the variety and intensity with which the game participants practiced ethical thinking in *Fable III*. Enabling participants to iterate through the ethical scenarios in different formats (e.g., text and game) or observe others playing the game may help learners reflect on their own myths and biases, and re-evaluate them.

The process of "stepping outside of the system" also may help learners to understand that any ethical system, scenario, game, learning activity, or dilemma is *designed*. A given scenario could have been designed differently, which could have impacted one's ethical decisions. The way that a scenario, game, or learning activity is designed is not the only way it could have been designed. Learners need to be able to lift the hood to discover that, like any experience or environment, it was designed with intention, could have been designed differently (Jenkins et al. 2006), and has particular values embedded in it (Flanagan et al. 2007; Belman et al. 2011), which are further negotiated by the individual. Making any design decisions transparent is essential for the learner to be able to fully reflect not only on their individual decisions, but how their decisions are part of a larger system. Helping learners think through how different systems may affect their decisions is important, as it also makes transparent how real-world and sometimes hidden social structures, pressures, and considerations may be affecting their everyday ethical decisions as well. Iterating through differently designed systems might help to reveal previously-hidden biases and values. In addition, co-creating a learning activity with the learners can also help to show how design decisions affect the way people practice ethics, or how one's own and societal values are integrated within and inscribed in our decision-making process.

Conclusion

This study investigates the practice of ethical thinking in *Fable III* by analyzing how twenty male participants ages 18–34 thought through ethical scenarios in *Fable III*, as well as comparing this to how ten male control condition participants thought through written scenarios based on *Fable III*. A coding scheme was developed and applied, which included

reasoning-, empathy-, reflection- and information gathering-related skills and thought processes.

The results of this study suggest that both RPGs and written scenarios can motivate a variety of ethical thinking skills and thought processes. Three hypotheses were tested. The results of testing H1 on two specific ethical scenarios suggested that skills and thought processes are practiced in both the game and written scenarios. Testing H2 revealed that few significant differences in the types of skills and thought processes practiced emerged between the control versus the game condition, when investigating three specific scenarios; however the significant differences that did emerge were noted. This suggests that games are also potentially effective ways to support ethical thinking practice and second, that any differences that arise between the two conditions may suggest particular strengths or weaknesses, or distinctions, to each medium in enabling particular ethical thinking skills and thought processes, but does not delegitimize one or the other for use in education.

The results of testing H3 suggested that there are minimal significant differences in the skills and thought processes practiced when comparing game participants on similar in-game scenarios; and more significant differences found between more dissimilar in-game scenarios. For instance, the most frequently used thought processes were reasoning-related for a financial-related scenario and both reasoning and empathy-related for an interpersonal-related scenario. This suggests that perhaps differences in the type or content of the scenario itself, rather than just the context (game vs. text-based) may be more salient in influencing ethical thinking practice and which skills or thought processes are used more frequently. While this result itself is not surprising, it does suggest that we should conduct further research on the specific design elements and their connection to the practice of specific skills or thought processes, rather than question the general legitimacy of games in supporting ethical thinking of any kind.

Moreover, although it was not significantly different when comparing participants across the "Surrender a Friend" scenarios, participants in the game condition more frequently called on friends and family to help them think through the decisions in the game overall, than those in the control condition. Participants in the game condition also frequently thought through the direct consequences of their actions (90 % did at some point in the game).

The analysis of how male participants practiced ethical thinking in *Fable III*, as well as a content analysis of the game and scenarios, also revealed four design principles to further research for use in designing activities to support ethical thinking practice. These principles are by no means comprehensive, but meant to jumpstart discourse around the challenges of designing learning activities for ethical thinking and to invite further research around each specific design principle.

This study focused on a demographic that is primarily perceived to be the largest player of video games and the Xbox 360 console—males ages 18–34 years old—even if this perception is erroneous. Moreover, this demographic of gamers is frequently vilified and problematized, particularly in light of recent game culture issues, such as online harassment and bullying. Likewise, just as game players have been perceived as having less societal value, games themselves have not been viewed as educational, beneficial, or constructive, particularly commercial ones (Schrier 2016). The results of this study suggest that games, even mainstream COTs games, could be effective practice fields for ethical thinking, and that male game players may practice ethics-related skills and thought processes in a game. Educators may want to consider games as another way to help students think through ethical choices, reflect on one's choices, and discuss potential differences in decision-making among their peers. Researchers may even want to use games as another

types of "ethics laboratory." For instance, investigators could use games to better understand human ethical behavior or to assess how people might respond to specific ethical questions. Games could even give insight as to how people think through current issues, such as those related to the environment or politics (Schrier 2016). Moreover, educators and designers who want to create activities that support ethical thinking practice may even want to learn *from* games to understand what works and does not work. In other words, educators and designers could take the four design principles and apply it to ethics education interventions of all kinds—and not just games.

Throughout this paper, I have tried to move the conversation apart from the possibility that games are immoral or damaging, to understanding the conditions under which they may support ethics skills and thought processes. My hope is that this research furthers the need to unpack all of these preliminary relationships and implications, and instead evaluate the specific design aspects of games and gaming contexts that might encourage ethical thinking.

Limitations of the study

There are a number of limitations to this study:

(1) The results from the study should be considered preliminary due to the limited sample size and low statistical power. Further, the significant effects that were found in this study may be the result of a Type I error, particularly due to the number of multiple analyses and comparisons performed.

(2) The participants in this particular analysis were all male, which may have biased the results. We cannot necessarily apply any conclusions to female participants. In addition, recruitment was limited to the New York metropolitan area and only participants that have an Xbox 360, regularly play games, and are in the 18–34 age range were included in the study, further biasing any results and constraining external validity to other populations. Moreover, the participants may be in different stages of moral development (Kohlberg 1976), which also may influence these results and this should be parsed out further in future research.

(3) While great care was placed to ensure that instruments were the same for both control and game participants (such as the journal, survey, and interview), only the game participants participated in a talk aloud, which may have affected results specifically on those scenarios that were observed. However, the scenarios that were analyzed for this particular paper, specifically, were not subject to a talk aloud by the game participants. Furthermore, the methodology itself—a comparison of ethical scenarios in a written or game condition—may mistakenly suggest that the comparison was meant to quantify media effects or media differences. Rather, this methodology aimed to further uncover which specific design elements (regardless of medium) may help support particular types of ethics skills and thought process practice, as well as legitimize the possibility of games, alongside other media, in the practice of ethical thinking.

(4) Again, while care was taken to ensure that the control scenarios were as close as possible to the scenarios provided in the game, it is difficult to control for so many different variables in a robust game. *Fable III* was not designed for empirical testing. Participants may have slightly distinct game experiences, which will affect the way they play through each scenario. Ensuring content validity between control and

game conditions would be an additional step toward limiting any differences between conditions.

(5) The coding method and scheme had some limitations. First, the scheme was developed specifically for *Fable III*, and may not be relevant to another game. More research should investigate the efficacy of the scheme for other games. Second, the inter-rater reliability of 86 % is higher than a minimum agreement of 80 %, but lower than a desired 90 % or above. This may be due to the complexity of the data collected, as well as the fact that the target inter-rater reliability was 80 % rather than 90 %. Third, the initial coding scheme was based off of 10 % of the data. While it was re-evaluated in light of the remaining data, a higher percentage of the data could have been used to create the initial scheme.

Next steps

In the future, the study's results could be validated with a larger sample size. In addition, the inclusion of female game players and players of various age groups (elementary school, middle school and high school), or older adults, in this type of study would be useful to understand any differences in how varied audiences interact with ethical thinking in RPGs. It would be useful to also investigate other RPGs, other genres of games, and games created specifically to educate players and motivate ethical thinking practice. A wider range of scenarios could also be investigated. Finally, further research should use controlled experiments to consider how specific game design elements may affect the practice of ethical thinking and the performance of specific skills or thought processes.

Appendix 1: Sample journal entry (game condition)

JOURNAL ONE

   This journal will cover:

   From the very beginning of the game until you reach the beginning of the quest named "The Bowerstone Resistance." NOTE: This is the point in the game when you first get to Bowerstone Industrial, right after you killed Lieutenant Simmons, and first meet Page, the leader of the Bowerstone Resistance. It is when you first need to earn 100 guild points.

   If you just do the Main Quest part, this journal will cover about 3 ½ hours of game play, so you may want to take notes as you go along. You do not need to complete this whole part in one sitting. You can take as long as you want to reach each point, and do not have to do it in one sitting. Just fill out a journal after you reach the end of the portion of the game. You only need to complete the Main Quest story line (top quest in the list of quests), but you can

   do any other side quests too.

   Fill out these questions and send it to XXXXXXX@gmail.com.

   1.
   Your ID Number (given in the instructions email): _____
   2.
   (optional) Date/time of day played the game: _____

3.

(optional) Approximate length of time playing the game: _____hours_____minutes

4.

What are the quests or activities you participated in today? (If you do not know the name, just describe the goal(s) or choice(s) involved.)

5.

Name one, two or three ethical decisions you made as part of the quests or activities. Use your judgment as to what was an ethical decision. Explain why you think these were ethical decisions.

6.

Choose one of the ethical decisions you had to make. Be as detailed as possible. Describe the options you had, the setting and people that were involved, the context, dialogue, situation, and what types of action or behaviors you chose.

7.

Why did you make this decision? What aspects of the game or game play (characters, scenarios, art, dialogue, points, mission, etc.) helped you make those decisions? Was there anything outside of the game you used to help you make a decision (e.g., other people, other resources)? What did you think about? How did you feel? Be as detailed as possible in describing how you made the decision.

8.

If you were going to walk through this scenario with another person, who hasn't played the game yet, what would you tell him/her? What strategies and tips would you share with him/her?

9.

On a scale from 1 to 10(most satisfied), how satisfied are you with your decision?
Optional questions:

10.

Did you think about this decision later, after you already made the decision and acted?

11.

Did you take into account other character's feelings when making your decision? What about other character's motivations? What about other character's perspectives? If so, how did you use this in your decision-making process?

12.

Did you gather any information when making your decision? If so, what did you use? What else would you have liked to know?

13.

Did you discuss the decision with others (other characters or other people) before making it? If so, who? Did you ask questions?

14.

Did you think about the consequences of your decision before you made it? Were you surprised by the consequences when you did experience them?

15.

Did you think about any prior experiences to make your decision? If so, how did they factor in?

Appendix 2: Sample control scenario

Imagine you are living in a time of wizards and dragons, princesses and princes, castles and moats, set in the Middle Ages in an imaginary European city. You are the prince or princess of the land called Albion. You are living in a castle in a kingdom. Your parents have been killed, and your older brother, Logan, is the ruler of the land. You have never gotten along with your brother, and you start to notice some suspicious activity. One day, Logan has the guards capture you. He also has captured your very close friend—a childhood friend whom you have grown up with.

Logan visits you and your childhood friend in captivity. He tells you that he has a few of the Albion townspeople held in a dungeon. Logan says he will release the townspeople if you trade your friend for the townspeople, but he won't let you sacrifice yourself. What do you do?

Appendix 3: Chart of example ethical decisions made in Fable III

Name of scenario	Choices in scenario	Associated journal
"Surrender a Friend"	a. Sacrifice friend b. Sacrifice villagers	Journal 1
"Walter"	a. Save walter b. Leave walter behind	Journal 2
"Logan"	a. Spare brother logan b. Kill brother logan	Journal 3
"Donate the diamond"	a. Donate a diamond b. Keep a diamond	Journal 4
"Tax the Parents"	a. Give benefits to parents b. Stay the same c. Raise taxes for parents	Journal 5
"Mine the lake"	a. Drain a lake for money b. Preserve the lake	Observation/talk aloud

Appendix 4: Chart of skills and thought processes (coding scheme)

Skills	Category
Consider another's character or values	Empathy-related (also arguably reasoning-related)
Consider someone's motivation	Empathy-related
Perspective-taking/consider someone's perspective	Empathy-related
Consider another's emotions/feelings	Empathy-related

Skills	Category
Consider/assess relationship with another character/person	Empathy-related
Consider other's opinions	Empathy-related
Search for other's opinions	Information gathering-related
Gather information not included in scenario	Information gathering-related
Choices depend on new information	Information gathering-related
Discuss with real people	Information gathering-related
Discuss with other characters	Information gathering-related
Interpret information	Reasoning-related
Use evidence to support choices	Reasoning-related
Provide reasons for a decision	Reasoning-related
Weigh different options	Reasoning-related
Interpret rules	Reasoning-related
Evaluate social standing or status	Reasoning-related
Evaluate agreement or promise	Reasoning-related
Consider one's role or responsibility	Reasoning-related
Consider longer-term effects	Reasoning-related
Consider short-term effects	Reasoning-related
Identify pros and cons	Reasoning-related
Consider consequences	Reasoning-related
Analysis of situation or context	Reasoning-related
Prioritizing goals or factors	Reasoning-related
Financial assessment	Reasoning-related
Military resource assessment	Reasoning-related
Consider own emotions	Empathy-related
Consider past events in game/play experience	Reflection-related
Consider past events outside game	Reflection-related
Consider media (TV, film) outside of game	Reflection-related
Reflect after decision	Reflection-related
Conduct cost-benefit analysis	Reasoning-related
Search for/seek more information	Information gathering-related

Thought processes	Category
Prioritization of other's perspectives when making a decision	Empathy-related
Prioritization of one's personal ethics/morality when making a decision	Reasoning-related; empathy-related
Prioritization of individual or self-interests	Reasoning-related
Prioritization of safety and people's lives over all other factors	Empathy-related
Prioritization of financial/resource gain when making a decision	Reasoning-related
Prioritization of greater good over individual interests	Reasoning-related
Prioritization of feelings or emotions to help make decisions	Empathy-related
Prioritization of relationships to help make decisions	Empathy-related
Prioritization of agreements or promises to help make decisions	Reasoning-related

Thought processes	Category
Prioritization of one's roles and responsibilities in making a decision	Reasoning-related
Decision based on number of lives harmed	Reasoning-related
Decision based on the evaluation of future value of a person or people as a resource	Reasoning-related
Evaluation of long term results over short term results	Reasoning-related
Assessment of past experiences within the game, and use it to predict the future	Reflection-related
Analysis of prior choices to justify current choice	Reflection-related
Prioritization of someone else's feelings to make a decision	Empathy-related
Will not make a decision without first gathering information to predict future outcomes	Information gathering-related
Imagining what if scenarios and possible consequences to justify decision	Reasoning-related
Liking a character/person as a reason for doing something	Empathy-related
Judgment that someone is a friend/romantic partner influences decision	Empathy-related
Problem solve from another's perspective and use it to make one's decision	Empathy-related

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