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Creating a Violence Prevention Video Game:

Literature Review and Research Summary for METRAC's RePlay Project

Ontario

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1

Introduction

This Literature Review and research summary examine ideas about violence in mainstream video games, the educational potential of video games, as well as video game preferences and practices of Ontario's youth. They examine literature and research about the impact of video games on young players, grounding it in an analysis of games, learning theories, and a systemic analysis of violence and power in society – particularly sexism and violence against women and girls. The Review discusses current non-entertainment and/or educational games, outlining some examples of video games as tools for learning and, in particular, tools for social change.

The research summary outlines the survey conducted with Ontario youth ages 8 to 14 years. The research identifies some game playing practices and preferences of diverse Ontario youth, with the intention of highlighting key features, which METRAC has incorporated in the development of an effective violence prevention video game, within a Canadian context.

METRAC's RePlay Project

This Literature Review has been produced as part of the RePlay Positive Gaming Project, a Metropolitan Action Committee on Violence Against Women and Children (METRAC) initiative to develop a video game for the purpose of promoting healthy relationships based on respect and equality, among Ontario youth ages 8 to 14. METRAC received funding from the Govermemt of Ontario to carry out the RePlay Project as part of an integrated package of educational resources being developed in partnership with the White Ribbon Campaign, Springtide Resources, and the Centre for Research and Education on Violence Against Women and Children.

The information gathered through the Literature Review and research has served as a foundation for the RePlay Project's development of a violence prevention video game, for children ages 8 to 14 years.

About METRAC

The Metropolitan Action Committee on Violence Against Women and Children (METRAC) is a community-based not-for-profit organization that works towards the goal of preventing and eliminating violence against diverse women and children, since 1984. METRAC is committed to the right of all women and children to live their lives free from violence and the threat of violence. METRAC's work is informed by anti-oppression principles that recognize women and children

from diverse communities experience violence differently, and that violence prevention measures must address their distinctive realities.

METRAC's programs seek to prevent and end all individual, institutional and systemic forms of violence. We work to build the capacity of communities to prevent and end violence towards women and children, through public education and training, safety initiatives, partnerships, research, and policy.

METRAC has four main program areas: (1) Community Safety, (2) Community Justice, (3) Community Outreach and Education, and (4) Integrated Gendered Initiatives. The RePlay Project is an initiative of METRAC's Community Outreach and Education Program.

For more information about METRAC, please visit www.metrac.org.

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Section
2

Video Game Theories

Play and Games

Before discussing the specific medium of video games, it is important to examine what games and play are and how they are a part of social life, interaction, and interpretation. Walther (2001) defines play as "an open-ended territory in which make-believe and world-building are crucial factors." Related to play are games – "confined areas that challenge the interpretation and optimization of rules and tactics – not to mention time and space." Play is an important aspect of games, but the two are not one the same. It has been suggested that a key difference between them is that games have winners and losers while play alone does not (Frasca, 1999).

Lantz and Zimmerman (1999) understand games as systems, where each element works together to form a complete whole. Elements include game rules, objects and tools that players use in the games, as well as the complex combination of "players' intellectual and emotional interaction during a game". Zimmerman (2004) states that games are voluntary and interactive in a manner that is explicitly participatory and artificial. They also have behaviour-constraining rules, conflict, and a quantifiable outcome.

Furthermore, game systems are embedded within larger systems – that is, broad and often taken-for-granted societal constructions such as politics, history, gender roles, race and class based hierarchies. In this context, games are simultaneously a collection of rules, play, and culture (Lantz and Zimmerman, 1999).

Players conform to a set of rules in order to step into a game and participate in the "magic circle" of play (Salen and Zimmerman, 2003). Inside of the magic circle, players understand their play as distinct from reality and their behaviour works within that simulated context. An important part of being in the circle is not only the formal structure of rules that regulate it; it is also the uncertainty of the game's "palette of strategic choice" that allows improvisation, flexibility, creativity, and the pleasure of an "uncertain ending" (Lantz and Zimmerman, 1999).

Games and the play they entail are subsumed in a broader cultural context, and as such, are cultural artefacts and a means of social interaction (Lantz and Zimmerman, 1999). Any kind of game, from simple board and card games to multi-million dollar console games, can be viewed as a formal rule structure within which play occurs; the game is fed by and feeds into in a broader socio-cultural system. As Lantz and Zimmerman conclude, "exploring the experience of games means taking fun seriously."

Uniqueness of Video Games

Although different types of games share basic elements, the video game medium has unique qualities that make it different from non-electronic games. The playing experience and social meanings attached to video games differ from the experience of non-electronic games, even if they share the same roots.

Video games may be uniquely engaging because they hold elements of both story-telling and game, making them distinct from other forms of media like film, books, and television. Teresa Dillon (2005) explains how video games were first viewed through the lens of narrative studies; that is, "how [a] story is told and the events or circumstances which give rise to it." The narrative approach to video games sees them as a means by which people tell stories and express themselves. Video games have more recently been examined through the lens of ludology – "the study of games" – and their play aspects are considered important in their own right as well. The combination of story and play that exists within video games makes them different from traditional non-electronic games, and different from other means of narrative.

Additionally, Juul (2005) says that video games are both real and fictional at the same time – real because they have actual rules and the experience of playing them is real, but fictional because they create an imagined world with fictional elements. He describes the "interaction between game rules and game fiction" as "one of the most important features of video games", which breaks from the traditions and general abstractions of non-electronic games (p. 1).

In another publication, Juul (2000) discusses new characteristics that single player computerized games have introduced, including:

- Time – the computer keeps pace of the game without relying on real time or the constraints of physical laws
- Automation/complexity – the computer "automate[s] the rules of games" to allow more complexity within the game
- Replay – the chance to return to the same point within the game, including the opportunity to save position and play the exact challenge over again
- Levels – the ability to progress between different parts of the game, often with increasing difficulty and different graphics/designs.

Juul mentions the popularity of multi-player computer games such as *Quake*, which may signal the electronic game "going full circle", returning to classic features, characteristic of non-electronic games, which do not allow for repeated replaying of the same challenges, and level progression.

It is often thought that "a good game is a series of mentally challenging choices", and that a unique quality of video games is how they allow for highly complex strategies and a wealth of multiple choices (Juul, 2003). However, there are examples of very popular video games that do not require mentally challenging choices, some of which may have players perform mundane tasks like housecleaning and home decorating. Juul cautions "there is probably some kind of core that most games share, of challenges, of getting better, and, in computer games, of enjoying a

fictive world"; yet "the innovative games are often those that find interest in what has been considered boring or unimportant." People can like a video game for different reasons and different games allow for a variety of types of enjoyment (Juul, 2005, p. 19).

Section
3

Violence in Video Games

The Controversy

Arguably, the biggest public controversy surrounding video games is the matter of violent content, some of which are representations of violence against women and girls. This controversy is no doubt intensified because of the increasing popularity of video games in general. For instance, 12.3% of households used the internet for the purpose of playing video games in 2000, increasing to 27.9% in 2003 (Statistics Canada, 2001, 2004). In 2003, 40% of Canadian households owned a game console (AC Nielsen, 2003). As AC Nielson (2004) states, "video games represent a vital and fast-growing entertainment medium, competing with television, the internet, and other forms of entertainment."

According to the Entertainment Software Association of Canada, the average game player's age is 33 years old, 62% of which are male and 38% of which are female. However, the most serious concerns focus on assumed negative effects of video game violence on children and youth, as a number of high profile, popular games contain violent content or themes. In light of the availability and success of some violent-themed games, there has been an ongoing and unresolved debate about whether or not violent video games lead to or encourage violent behaviour, among children and youth in particular.

Controversy about video games as a burgeoning medium is not surprising when considering reactions to other mediums in the past. Squire (2002) explains how academics and politicians voiced similar health and morality concerns, with the emergence of television and film in the mid-twentieth century. Games themselves have historically inspired social and moral concerns and have been subject to regulation, from golf to pinball machines to video games (Juul, 2005).

Popular Examples of Games Containing Violence

Some popular video games in recent years have come under the media spotlight due to their depiction of graphic violence. *Mortal Kombat* is an example, as each round of the game concludes with the player killing an opponent in a brutal manner (Kooijmans, 2004). One character uses a powerful blow to decapitate his victims, while others rip the hearts out of their victims or electrocute their opponents. In many ways, the only female character in *Mortal Kombat* seems to embody sexist ideas about women – she is at the tournament against her will, and uses a burning kiss of death to kill her opponents (Berger, 2002).

The *Grand Theft Auto* series is another popular set of games that have received press due to their options for violence (Prensky, 2005). In 2002, the Minneapolis-based National Institute on Media and the Family (NIMA) raised concerns about the disturbing depictions of violence against women featured in *Grand Theft Auto: Vice City*. *Grand Theft Auto* games allow players to choose taking on the character of a criminal who can use violence and abuse to navigate through their world. Players can increase their score by soliciting sex workers and can achieve higher points by beating, kicking, and killing the women to get their money back (Bennett, 2003; Wright, 2002).

A third example of a commercially successful violent game is *Soldier of Fortune*, released in 2000 for use on personal computers. The character is given 26 areas where to get hit by a bullet (Gentile, Lynch, Linder, and Walsh, 2004). The game is played from the perspective of a first-person shooter, which has added to the controversy about violence (Kooijmans, 2004).

Video Games and Real-Life Aggression

Over the past thirty years, video games have faced criticism from those who believe that they lead to real-life aggression in children and youth. Many have expressed that violence in video games can alter perception, teaching children that violence is an acceptable way to deal with problems and conflict (Browning, 2005). Advances in graphic technology that allow very detailed violence and gore to be depicted have compounded the criticisms (Kooijmans, 2004). It has been speculated that children and youth would become increasingly desensitized to violence as a result of exposure to violence in video games (Cesarone, 2003; Needleman, 2001).

More than 300 studies have been conducted about the possible effects of media violence (Jenkins). For example, Clark (1993) states that the more children practice violent acts on screen, the more likely they are to perform these acts in day-to-day situations (Anderson and Dill, 2000; NIMA, 2001). Irwin and Gross (1995) and Schutte, Malouff, Post-Gorden, and Rodasta (1988) assert that young children imitate themes from video games in their subsequent play. Sheff (1994) found that there is an increased chance that children who play violent video games frequently become more aggressive towards other children, less cooperative and less altruistic, more tolerant of real-life violence, and increasingly afraid of the outside world (Anderson, 2004; Anderson and Bushman, 2001; Anderson and Dill 2000; Gentile, Lynch, Linder, and Walsh, 2004; Walsh, 2004).

Another common criticism is the idea that video games promote individualized action instead of cooperation. It is based on the notion that gaming scenarios involve an anonymous character performing aggressive acts against an anonymous enemy. In a 1992 study by Provenzo, it was established that the top 10 selling Nintendo video games of all time focused on a theme pertaining to an autonomous individual working independently against an evil force. Researchers such as Berger (2002) and Kraut (2001) have performed studies which suggest that people who spend a great deal of time online – and by extension, playing video games – do not talk to people as much as they used to, prior to their internet involvement. Solitary play has been said to lead to increased feelings of stress, social isolation, and depression (Berger, 2002).

Problems with Media Effect Research

Jenkins explains that media effect research is "inconclusive" and "criticized on methodological grounds." A key criticism of this research is that violent behaviours are pulled out of their contexts, and oftentimes, research subjects are asked to consume violent content that they would not normally consume. The notion that a laboratory or study situation is extremely different from contexts where video games would usually get played, is left unexamined. Comparisons made in media effect studies are also contested, as various genres of video games with very different rules and forms are often simply assumed to be similar in meaning and structure (Squire, 2002).

Significantly, most media effect studies have only shown correlations between media violence and aggressive behaviours, as opposed to firm causal relationships. This means that the research "could simply show that aggressive people like aggressive entertainment". If there is tentative agreement about media effect research, it appears to be that "violent video games may be one risk factor – when coupled with other more immediate, real world influences – which can contribute to anti-social behaviour" (Jenkins). Squire (2002) states that such studies "make wild logical leaps" by interpreting limited behaviours in research settings as directly reflective of real-life situations of violence, in addition to ignoring "trends that show inverse correlations between game-playing and violent behaviour."

When conceptualizing video games within the realm of play, the "magic circle" becomes an important idea. Critics of media effects research understand violence within games as part of the playing experience, and believe that aggressive acts occurring during game play are largely understood by players as encompassed within the realm of play – in other words, the magic circle remains unbroken even during the game's aggression. Much of the media effects research measures assumed incidents of aggressive behaviour within play as direct indicators of real-life aggression. Jenkins concludes that those pieces of research may only demonstrate that "violent play leads to more violent play" and not necessarily that violent play leads to real-life violence. Criticisms also arise when examining media effect studies and the interpretation of video game-playing as socially isolating behaviour. Research shows that many gamers play with friends and family members, and even single-player games involve social interactions amongst game players and those observing or giving advice. Additionally, increasing numbers of games include multiple players, either within the same physical space or remotely through the Internet (Jenkins).

Social Context of Video Games

Since video games are game systems situated within larger socio-cultural systems, it is necessary to examine the socio-cultural context to understand the violence and sexism represented within them. Many researchers and activists have discussed how an acceptance of violence and abuse appears to be a general norm in Western societies, particularly gender-based violence against women, youth, and children. Canadian statistics certainly reflect this. According to Statistics Canada (2006), nearly 28,000 incidents of spousal violence were reported to the police and 84% of victims were female. Compared to men, women faced more serious incidents of violence with respect to injuries and experienced multiple violent episodes (p. 11, 13). Children and youth make up 61% of reported sexual assault cases. Of this, girls and young women represent 79% (Statistics

Canada, 2004). More generally, one-half of all Canadian women have experienced at least one incident of physical or sexual violence since the age of 16 and four in ten Canadian women experience sexual assault in their lifetimes (Statistics Canada, 1993; Johnson, 1996). Even though it may be taboo to speak about violence as an accepted social norm in public forums, statistics demonstrate the reality that gendered violence is at epidemic proportions, particularly in private, interpersonal settings.

Most forms of media reflect normative violence, abuse, and stereotypes about masculinity and femininity, and this can be seen as a root source of gender-based violence. For example, the average Canadian child sees 12,000 violent acts on television annually and in 2001, television shows averaged 40 acts of violence per hour (Canadian Paediatric Society, 2003, p. 301-306; Media Awareness Network). Mass media sources depict women and men's roles and capabilities in sexist, heterosexist, male-oriented, and power-laden ways that, among other things, show women to be inferior (Public Health Agency of Canada). Video games, particularly those from mainstream industry sources, can be seen as fitting in line with other forms of media, in their inclusion of violent and sexist content.

While the research does not conclusively show a causal relationship between violent video games and violent behaviours, it can be said that mainstream video games, like other forms of mainstream media, reflect society's accepted violent norms and power structures. Dominant media reflect dominant understandings of identity factors like gender, race, class, sexuality, ability, and age, as well as social systems that privilege some identities over others. As such, most mainstream games are not structured to encourage their players to re-envision and challenge societal violence and oppression within their rule systems, fantasy worlds, and magic circles. A number of factors may add to the mainstream gaming industry's cumulative decision to regularly leave society's power structures unchallenged, one of which includes the reality that challenging dominant assumptions at their very core does not often lead to great profits.

Beyond the actual content of video games and any intentions of the industry actors who create them are the ways the medium is perceived, used, and interpreted by players. The actual experiences of players and how they define their relationship to the medium is an under-studied phenomenon; Bryce and Rutter (2002) say that "it is all too easy to give priority to technology over the people who use it and begin to see technology as an autonomous agent" working upon its players and the society itself. Indeed, traditional media effect studies have uncritically viewed different forms of popular mediums as simply acting upon those who consume them, with little conception of how consumers may 'act back'. While popular mediums and technology tend to reflect mainstream cultural understandings and values, they are also "open to resistance, negotiation, rereading, iconicizing, reproduction, or valorization through their use" in the real world (p. 253).

A possible example of such negotiation within the experience of game play lies with *Grand Theft Auto* series games, which have been criticized for their violent, sexist content. Although it was likely unintended by the developers, the fact that game characters of *Grand Theft Auto: San Andreas* can only be fuelled by consuming fast food, reflects a reality of limited access to fresh wholesome foods in low-income, racialized urban areas, where multiple fast food and convenient food outlets tend to operate in these communities. In the course of the game, players, particularly those living in low-income areas themselves, may re-read this representation in an unintended manner as they "unpack" the game as a "social artifact" (Bogost, 2005).

Flannigan (2005) notes a similar process of in-play resistance as she discusses how girls may choose to play mainstream, commercial games "in their own ways". In playing *Grand Theft Auto: Vice City*, she notes that girl participants revealed ignoring the mission in the game to simply drive around the detailed urban environment constructed as a backdrop for the game. As such, girls may have a tendency to take on the '"hacker' position, challenging the status quo through their play." These examples demonstrate the versatility of mainstream video games can allow for unexpected resistance from their players – even the sort of resistant reinterpretation that may be completely contrary to and outside of game developers' original intentions.

Gender Stereotypes in Video Games

The content within mainstream video games often reflects society's historical ideals about masculinity and femininity – what it means to be a 'real man' and 'real woman'. Although North American media statistics suggests that increasing numbers of women and girls consume video games, research finds that female characters are underrepresented in video games (Clegg, 2004; Glaubke, 2001). Other studies reveal that female characters do not take as active a role and are often relegated to the background of a game (National Institute on Media and the Family, 2001; Cassell and Jenkins, 1998; Funk, 2001; Newman, 1992; Wolf, 1997). A 2001 study by the U.S.-based organization Children Now entitled *Fair Play: Violence, Gender, and Race in Video Games*, elaborates on gender stereotypes, explaining that male characters are more likely to engage in physical aggression than females, while the latter are more likely to scream, wear revealing clothing, and be nurturing (Newman, 1992). They found that male characters are more likely to be portrayed as competitors, while female characters are more likely to be portrayed as props or bystanders (Cassell and Jenkins, 1998; Newman, 1992; Wolf, 1997).

A more recent 2003 content analysis of 12 popular games found evidence that the number of female characters seems to have increased, and researchers reported that there were no submissive female characters in their sample (Jansz and Martis, p. 266). However, they found that physical features of both male and female characters were stereotypical: "Men are still represented as hyper muscular characters, and women hyper sexualized characters" (p. 267). For example, although the *Tomb Raider* video game series has a female lead character, she is depicted as skinny, large-breasted, and long-legged (Berger, 2002).

Graner Ray (2005) holds the view that mainstream gaming industry creates barriers for women and girls when they access video games, despite statistics suggesting women and girls are a fast-growing gaming and online population. The structure of many games is rooted in the gendered socialization of boys and men. Games often reflect the learning and communication styles, as well as playing and avatar preferences, of boys and men.

For Ray, men seem to value exploration, risk-taking, and detrimental consequences of mistakes, within a gaming experience, and the rules and form of most video games tend to conform to those features. In contrast, women appear to value understanding how things work before they play a game, as well as being able to model effective playing techniques and be given more incremental 'punishments' for mistakes as they play.

Similarly, video gaming can be uncomfortable for women and girls when they have little choice but to play via over-sexualized female avatars. Many mainstream video games, then, do not appeal to the desires and comfort levels of women and girls. Although some observers critique the way that Graner Ray's ideas are often based on false Western gender binaries, they agree that her insights point to very real sexist engendering of and barriers within the traditional game industry (Taylor, 2006; Reilly, 2004).

Discourses about the sexist engendering of video game content often miss how leisure time, activity, and spaces are gendered in and of themselves – leisure is considered less appropriate for girls and women in a society that, among other things, relies on their constant unpaid labour in private spaces. Both researchers and the public often automatically code gaming as a masculine activity. Added to this is a common perception of gaming as a solitary and 'youthful' leisure activity to be outgrown (Bryce and Rutter, 2002 p. 245). The leisure women do engage in is often private and invisible, while public, visible leisure activities are more appropriate and available to boys and men. Video game playing as leisure within public and private settings is similarly gendered (p. 249, 251).

Bryce and Rutter (2002) also examine technology as a gendered phenomenon; boys and men are socially considered more adept at using, creating, and manipulating different forms of technologies than women. "Given that such technologies are central to computer gaming practices and activities, their perception as masculine is a vital, but often ignored, aspect of the gendering of gaming" (p. 252). The coding of leisure activities, leisure spaces, and technology often renders female gamers invisible and marginalized within public and private game playing settings.

More recent evidence in North America shows that girls and women are significant consumers of video games, albeit generally hidden from public view. Bryce and Rutter (2002) conceptualize this as female resistance to mainstream notions of women's appropriate use of leisure and relationship to technology (p. 251). Indeed, the very act of video gaming may reflect a form of male resistance to dominant masculinity as well – the idea that boys and men must be physically strong and adept in team sports to be 'real men' (p. 253). This diverse reading of game playing behaviour may demonstrate a significant distance between game content, game design, industry marketing intentions, and the negotiated, and multiple ways gamers may see their interaction with the medium.

Racial Stereotypes in Video Games

Mainstream video game content tends to reflect a racist social order where women and men of colour are devalued, ignored, and problematized. For most forms of mass media, the invisibility of characters of colour is stark (Tallim, 2005). Besides under-representation in the media, stereotyping representations of racialized communities contribute to another portrayal problem. According to Statistics Canada (2003), Aboriginal peoples made up 3.3% of Canada's population, in 2001. People other than Aboriginal or non-white in colour were identified as "visible minorities" and made up 16.7% of the Canadian population, in 2001. Additionally, the population of "visible minorities" is growing faster than the total population of Canada (Statistics Canada, 2005). Entertainment media in general does not reflect this diversity (Tallim, 2005).

A 2001 study by the U.S.-based organization Children Now entitled *Fair Play: Violence, Gender, and Race in Video Games*, examined some of the most popular games to assess the extent of stereotyping within them. It found that 86% of protagonists were white men and that men of colour are most often portrayed in stereotypical ways. Seven out of ten East Asian characters were fighters, and eight out of ten Black characters were sports competitors. 79% of Black male characters were also depicted as verbally and physically aggressive, compared to 57% of white male characters (Tallim, 2005).

In a similar 1998 study by Children Now, it was determined that children associated white characters with positive attributes such as being rich, well educated, skilled in leadership, and intelligent. Conversely, they associated characters of colour with breaking the law, having financial difficulties, being lazy, and acting foolish (Weseman, 2004). In their content study of twelve popular games, Jansz and Martis (2003) found that there was an overrepresentation of white characters and that "heroes belonged exclusively to the white ethnic group" (p. 267).

In the past, Black and Latin American characters were frequently represented in the sports arena. However, some newer non-sports games feature Black and Latin American characters, but they are often associated with themes of violence and crime (Weseman, 2004). In *Grand Theft Auto: Vice City*, a character opens the game by stating: "My mission in the game is to kill the Haitians. I hate these Haitians! We'll take them out." (Heritage Konpa Magazine, 2001).

There is less experiential research and discussion about how People of Colour and Aboriginal People interpret their own game playing activities, beyond the racialized content of the games. As in the case of gender, racialized people may be negotiating the gaming experience in ways to resist society's racist stereotyping and expectations, which are often embedded in the video game content. Worth noting is the lack of academic writings on game content and interpretation concerning other identity factors such as physical abilities, age, income level, and sexual orientation. These are equally important "factors likely to influence the experience of gaming" (Bryce and Rutter, 2002).

Section
4

Video Games, Education, and Social Change

Transcending the Question of Good or Bad

In June 2006, academics and game developers Ian Bogost and Heather Chaplin spoke at the annual *Games for Change* conference, held at New York City's Parsons The New School for Design and hosted by the Serious Games Initiative. They argued for moving beyond the question of whether games are inherently 'good or bad' to focus on the potential they have to affect social change. Both Bogost and Chaplin discussed how the medium could be used to make statements about how the world works, and more interestingly, how the world could work.

Alluding to the notion that mainstream games encompass particular conceptions, assumptions, and models about the way the world is structured, Bogost and Chaplin demonstrated how counter-arguments about the world's structure can be presented through games. In other words, games can help to promote different ways of knowing and doing within a more just and equitable world. In the words of Clay Shirky (2005), "the hope for games for change is to offer the opportunity for players to change their worldview rather than to impart mere information."

During the same conference, a focus on the potential of games to challenge mainstream thinking was central to discussions. Gaming was spoken of as a "literacy of transgression", where players sought to subvert rules and explore their limits; to question everything; and to propose alternate responses. In this way, using video games for players to create a new vision of the world and the norms and structures within it, can become an attainable possibility. Such possibilities bear promise of envisioning a new world where sexism and violence against women and girls are no longer the norm and the accepted.

Games and Education

Squire (2002) states: "concerns about the effects of 'violent' video games have drawn our attention away from the broader social roles and cultural contexts of gaming." There is little research about what players experience when they play video games and what exactly they are learning when they interact with the systems of games. He notes that there has been research about "edutainment" games such as *SimCity* and how they impact a player's understandings of other world realities, how they can support formal and informal learning, and how "new forms of gameplay" can be created through games that "draw metaphors from other domains." This research points to the importance of using video games in an environment that supports the learning experience, responds to the learner's needs and skills, and clarifies learning goals. Such

games involve "active interpretation" by their players, because they use symbols to represent real-life realities – other learning appears crucial to structure interpretations of the game and contextualize the game playing experience as a learning process.

Referring to the statements of an urban planner, Squire discusses how a game's analogies as interpreted by players may be different than expected: "*SimCity* potentially teaches the player that mayors are omnipotent and that politics, ethnicity, and race play no role in urban planning." Since video games, like any medium, contain base assumptions and omissions that are usually guided by mainstream understandings of societal structures, it is important that the learning context works to explain the frame through which players are to understand the game.

A question about transfer arises in considering the potential of games to enhance learning. Transfer is the idea that what someone learns in one context can be carried over to another context – for instance, being able to bring learning from the video game playing context to real-life situations. Squire (2002) states: "research on transfer gives very little reason to believe that players are developing skills which are useful in anything but very similar contexts." But envisioning games as social practices, could allow for more meaningful video game playing, through a rich learning context. This point is further underscored by activity theory in which outcomes are created through the interaction of many elements, including the learner, the tools they use, the rules they function by, and the community they are a part of. In short, learning is not based on a video game and game player alone, but is a transformation "that occur[s] through the dynamic relations between subjects, artifacts, and mediating social structures."

Existing Educational Games

According to Serious Games Initiative:

> The number of non-entertainment games under development is rapidly increasing. The appreciation for the ideas, skills, technologies, and techniques used in commercial entertainment games is at an all time high. Many commercial games are already in use for purposes other than entertainment. Titles such as *SimCity*, *Civilization*, *Hidden Agenda*, and others have been used as learning tools in schools and universities across the globe (www.seriousgames.org/about2.html).

Indeed, many sectors use video games for learning and training purposes, including the military, schools, and the health field. For example, the U.S. Navy and Air Force use custom-designed "Smart Games" for training and performance testing. The Navy has also developed a computer-based program that provides antisubmarine training (Gunter, 1998; Prensky, 2005).

From 2001 and 2003, the Massachusetts Institute of Technology ran a Games-to-Teach Project that sought to "move beyond the current state of edutainment products which combine the entertainment value of a bad lecture with the educational value of a bad game" (icampus.mit.edu/projects/GamesToTeach.shtml). They describe video games as tools that can

assist the learning experience, as opposed to replacing any element of effective teaching methods, environments, and actors.

The Games-to-Teach project developed video games to help students understand scientific phenomena – by "inferring scientific] rules and relationships through the game space"; the intention is for game players to develop an intuitive understanding about how various processes work (Jenkins). For example, the game *Hephaestus* requires players to build robots that will withstand various environmental stressors such as heat, snow, and wind. *Supercharged!* is a three-dimensional video game intended to support learning about electromagnetics. The game begins with a player being sucked inside of a film projector; players must navigate their way out by using correct electromagnetic charges. On the other hand, *Biohazard* requires a player to treat patients exposed to hazardous agents (Wolf, 2003).

Star Wars®: The Gungan Frontier is a commercial educational video game created by Lucas Learning Ltd. to help children learn about how ecosystems work and change. Players build an environment with interdependent elements and processes. This simulation was intended to allow players to gain knowledge about real-life environment systems by building systems themselves. The game combines graphics, animations, and music in the hopes of providing a fun and entertaining learning experience (www. lucaslearning.com).

There are numerous other video games designed to teach about different subject matter, some of which are commercially distributed. For instance, Social Impact Games list a variety of computer games that have "non-entertainment goals" and focus on areas such as public policy, science and math, health and wellness, business, and military. They even list recent "advergames", which are created with the goal of advertising particular branded products such as cars, candy, and toys (www.socialimpactgames.com).

Games for Social Change

A distinct form of non-entertainment games are those created to promote social change and, oftentimes, are designed to challenge mainstream understandings of the world. At a basic level, they seek to impart particular values to their players through the process of play. Games for Change, a branch of the Serious Games Initiative, describe these digital games as addressing "the most pressing issues of our day, from poverty to race and the environment" (www.gamesforchange.org).

There are many examples of games to promote social change, many of which are widely available online. For instance, Persuasive Games is an independent company that "design[s], build[s], and distribute[s] electronic games for persuasion, instruction, and activism". One of its popular online games is *Disaffected!*, a parody that is based on Kinko's copy stores and is described as an "anti-advergame". Through the process of playing the game, issues such as labour, customer service, and management are explored in a manner that implicitly challenges the common practices of 'big-business' retail. In its description of *Disaffected!*, Persuasive Games ask key questions of the video game medium itself:

> While examples of branded games go as far back as the Atari 2600, "advergames" have become very popular in the last ten years, first as web-based games and now as both casual games and product/ad placement in commercial games. Advertising in games is a growing yet little questioned area of gaming. Are games only capable of carrying positive advertising messages? Or can they also enact dissatisfaction and criticism against corporations? Anti-advergames are designed to detract from or call into question a set of products or services for expressive, cathartic, social, or political purposes (www.persuasivegames.com/games/game.aspx?game=disaffected).

Persuasive Games have also released a series of "newsgames" based on subject matter from current events; such games act as satires of current events to open alternative dialogues on real-life issues, in contrast to mainstream public discussions. Games in this series critique current issues such as contested 'post-9/11' airport security measures, the global oil industry, and big agri-business practices (www. persuasivegames.com/games).

The *McDonald's Video Game* is another popular online game. It incorporates varied critiques of the McDonald's corporation within its content. The website explains the motives of its makers, which are "to create an online game to explain to young people that this is the price to pay in order to preserve our lifestyle" (www.mcvideo game.com/why-eng.html). In the process of the *McDonald's Video Game*, players move through elements of the production process of fast food - from farm, slaughter, franchises, and corporate profit. It demonstrates industry profit as proportional to environmental degradation and labour relations. Mollaindustria, the makers of this game, describes its perspective on the medium:

> We can free videogames from the "dictatorship of entertainment", using them instead to describe pressing social needs, and to express our feelings or ideas just as we do in other forms of art. But if we want to express an alternative to dominant forms of gameplay, we must rethink game genres, styles and languages. The ideology of a game resides in its rules, in its invisible mechanics, and not only in its narrative parts. That's why a global renewal of this medium will be anything but easy (www. mollaindustria.it/pivot/entry.php?id=18).

Other online games Mollaindustria has created include *Queer Power: Transgender Videogame* and *Tamatipico: Your Virtual Flexworker* (www.molleindustria.it/home-eng.php).

Several games have been released to raise awareness on issues of global conflict, war, and human rights. For instance, *PeaceMaker* is a game simulation of conflicts between Israel and Palestine and is described as a tool to promote understanding amongst those directly involved the conflict, and outside observers as well (www. peacemakergame.com). *Darfur is Dying*, a "narrative-based simulation", was designed to demonstrate how individual people, families, and communities have experienced the crisis in the Darfur region of Sudan. Most interestingly, it ends by referring players to outside links to learn more about the conflict and take real-life activist actions like

signing online petitions (www. darfurisdying.com). *A Force More Powerful* "simulates nonviolent struggles to win freedom and secure human rights against dictators, occupiers, colonizers, and corrupt regimes, as well as campaigns for political and human rights for minorities and women" to help teach players non-violent means of direct action (www.aforcemorepowerful.org).

Many non-entertainment games are designed to push mainstream boundaries, often-using parody, humour, and even shocking content to question dominant discourse on a variety of issues and current events. They can reflect a variety of viewpoints and opinions and are sometimes created to challenge social taboos about issues such as sex and sexuality, violence, identity, and free speech. As such, some of these video games have garnered public attention for the controversies they spark.

For example, *Super Columbine Massacre RPG*, a video game about the Columbine High School massacre in 1999 from the perspective of the shooters, has provoked many negative reactions from a variety of sources for its truly difficult material. While the game's visuals are mostly simplistic and non-realistic, the controversy lies in its socially inappropriate content – an indication that the social meanings video games hold have less to do with the way they look and more to do with how people interpret them.

Apart from the controversies, Ian Bogost (2006) discusses how a representation of the massacre from the shooters' viewpoint does something "truly unique to videogames as a medium" – that is, it allows players to take on a socially unfavoured role to gain a rare understanding of an event or issue. Bogost argues that "games need not be fun to be worthwhile" and that there is a need for socially challenging video games that are "difficult to play – not technically difficult, but conceptually difficult".

Non-entertainment games designed to promote, teach, or merely introduce the possibility of social change can certainly be created in ways that may be considered objectionable. Indeed, they can challenge the status quo in difficult ways, or they may be based upon values that people disagree about. The very flexibility of video games as a potentially transformative medium intrinsically allows for such a diversity of expression and opinions.

Section
5

Creating Effective Socially-Oriented Educational Video Games

A Well-Designed Educational Game

The starting point for creating an effective educational *video game* to promote social change is to understand the basic principles of effective educational *games*. Building on these proven principles will help ensure that a video game seeking to challenge social inequalities and transform social problems will have the most meaningful impact upon players.

Paras and Bizzocchi (2005) describe motivation and 'flow' in a learning environment. Flow is the ideal "state where there is a perfect balance between challenge and frustration, where the end goal becomes so clear that hindrances fall out of view". When students are in the state of flow, they are fully motivated to "push their skills to the limit", and are in the best position to learn more and apply their knowledge creatively. Paras and Bizzochhi argue that a flow experience can be fostered in the immersive magic circle of a game and that "learning and gaming are fundamentally built from the same base." To be fully successful, then, an educational game must:

- Introduce and maintain a real challenge for the player
- Maintain "sensory and cognitive curiosity" for the player
- Give the player a feeling of control through feedback mechanisms that are embedded in the process of gameplay
- Use fantasy to reinforce teaching goals and "stimulate the prior interest" of the player.

Paras and Bizzochhi also mention the need for reflection in learning – that is, the process of learners thinking deeply what they are being taught and bringing those ideas forward in a new way. While it is challenging to encourage learners to reflect when they are in a state of flow, reflection can be seamlessly imbedded into a game's structure by including it as one of the game's play elements.

The Fundamentals of Designing Effective Educational Video Games

Building on the fundamentals of making an educational game, Fortugno and Zimmerman (2005) discuss key elements of developing an effective educational video game. They stress that educational video games must be, above all, games, with all of the basic elements that make them meaningful and enjoyable for players. Despite the fact that an educational game has educational intentions, it must allow players to have true play experiences, including meaningful interactivity, a

level of control over the process of playing the game, structured rules and goals, and the chance to learn how to play the game in increments.

Henry Jenkins from MIT's Games-to-Teach project states that educational games often fail because "they use generic game templates … rather than original game rules, designed to illustrate the rules of a system", whether that system be ecological, socio-political, or otherwise. Related to this is what Fortugno and Zimmerman (2005) term embracing the "'gameness' of games", or the complex elements combined to make video games fun and immersive for players. They argue that well-intentioned educators too often erase elements of competition from educational video games – one of the very features that act to draw players into an experience of game play. At the heart of common problems with educational games is that games must first and foremost be good games, and their content must follow principles of good design.

Another important aspect of building an effective educational video game is to create "process-based gameplay"; in other words, directly connecting the form and content of the game in a seamless, 'natural' way (Fortugno and Zimmerman, 2005). Captivating form includes "dynamic visuals, interaction, and the presence of a goal and rules that govern play", and this form should make sense when coupled with a game's content (Mitchell and Savill-Smith, 2004, p. 48).

In the Keynote address of the 2005 Games for Change conference, held at the City University of New York, Clay Shirky described the ideal of a "content-free" game, where any normative lessons are embedded into the game's design and rules, as opposed to being consciously articulated. In other words, "what a game says is not what it means. What it does is what it means." From the player's point of view, then, learning must be seen as a real, meaningful part of an edugame's play (Mitchell and Savill-Smith, 2004, p. 49).

Shirky (2005) also stressed the importance of iteration and incremental learning in video games as directly related to their "want-to-playability" – a game that allows players to gradually learn its rules and repeat playful actions several times and in several ways can help to emphasize a normative point, lead to real learning, and promote attitudinal changes. Finally, Shirky discussed the positive results of allowing players to have access to and participate in creating the rules of the game. Players are more engaged with and are more likely to replay video games where they help make the rules. Instead of increasing the player's information, these elements can help spark change in players' worldviews.

In practical terms, Fortugno and Zimmerman (2005) emphasize respecting the fact that making any game is difficult, understanding the limitations of project resources and the limitations of video games to act as teaching tools, as well as knowing the larger context of how a game will be used, who will use it, and how it can be distributed to its audience.

In summarizing recommendations from various pieces of research, Mitchell and Savill-Smith (2004, p. 51-52) advise that edugames should, amongst other things:

- Allow players to exercise their gaming skills
- Have a simple "start up" process and be simple enough to minimize frustration in trying to learn game rules
- Be short to maximize satisfactory outcomes but allow longer sessions

- Be in tune with the needs, identities, and learning preferences of the audience, as well as players' needs for social interaction and emotional engagement
- Suit the learning objectives and avoid unnecessary goals or elements that could confuse the central objectives
- Have multimedia features that compliment each other
- Allow the user to control the learning tools
- Have different levels of challenge and a progression of different skill levels and skill sets
- Include feedback and debriefing mechanisms
- Allow players to correct errors so they can improve their game play
- Encourage reflection and include external links and material
- Have a satisfying ending.

Gender Inclusive Design

A video game that seeks to prevent violence and promote healthy, equal relationships must be appealing and accessible to boys and girls. Given that the mainstream video game industry often creates games that have barriers for girls and women, it is important to employ principles of gender inclusive design. Graner Ray (2005) proposes some key practical solutions to ensure games are suitable for an audience with common masculine and feminine socialization:

- Within the game play, create opportunities for imitative play, in addition to play that is risk-taking and exploitative
- Create varying 'punishments' or consequences for mistakes in game play that do not lead to ultimate loss, such as the end of the game
- Develop female avatars that are not hyper-sexualized and test those avatars with your audience to ensure that they can connect with them
- Include accessible language in the game that will not be insulting or stereotyping of women and girls
- Hire more women developers and consciously design games to appeal to a mixed gender audience.

It is important to understand the supposed 'differences' in gaming between girls and boys are not a simple result of biology, genes, or evolution – they are specifically social and historical. There is much variety within and across genders. Play ideals and preferences are necessarily interlocked with many identity factors. Tailor (2006) notes that the very wholehearted belief in 'what girls do naturally' led to the advent and quick decline of the "pink games movement" in the late 1990s, when video games were made to respond to girls' supposed love of things like fashion and makeup. Despite the presence of such assumptions in Graner Ray's writings, expanding the design of video games will ultimately help them grow into a "sustainable cultural form" – Tailor concludes that "more interesting, more progressive, more inclusive game design is something we need for the good of all players."

Specific Guidelines to Design Video Games for Social Change

Although there is growing awareness that games encompass deeply held socio-political values, either consciously in video games designed for social change or unconsciously in entertainment games, Flannigan, Howe, and Nissenbaum (2005B) point to few practical guidelines about how designers can effectively include values into the design of a "socially-oriented educational game" (p. 758). The authors attempt to fill that void by outlining a general "hybrid" methodology that "is not intended to replace well-established design methodologies, but rather to demonstrate with concrete examples the way in which attention to values in the design process can inform the stages of many existing design processes" (p. 751-752). In other words, these practical principles can enrich the design of an effective edugame that is consciously created to challenge mainstream or status-quo societal values amongst their players – including the social acceptance of gender inequities and gender based violence.

A "value-sensitive design" begins with a process of discovery. Here, developers must examine every element from high-level project goals, unrecognized embedded values, and prior theoretical work to values of players and other stakeholders (2005A). Values encompass socially and culturally determined beliefs, assumptions, and deeply held norms; as such, they can be very difficult to identify. Therefore, Flannigan, Howe, and Nissenbaum suggest game designers must introspectively examine their own deeply held values that inevitably shape the process of creating a game. After this reflection, developers are better able to identify "value-based conflicts" that may "occur when designers find themselves unable to implement all values to which they have committed" (2005B, p. 755-756).

Through testing detailed prototypes directly with users, designers can work through the identified values-based conflicts in separate elements of a video game. It is important to break down game components into multiple prototypes that can be used to solve distinct questions about game-play, aesthetics, and character behaviour. The authors describe using prototype testing with users to make trade-offs between truly conflicting values and to 'dissolve conflicts', where creative solutions to apparent conflicts between values, could be achieved through the game's design itself (Flannigan, Howe, and Nissenbaum, 2005A, p. 757-758; Flannigan, Howe, and Nissenbaum, 2005B).

Finally, Flannigan, Howe, and Nissenbaum (2005) identify a central challenge to completing the process of value-sensitive design is verifying the most important project values are embedded into the game and other values are not. It is also "essential that playability, entertainment-value, and pedagogical components [are] not weakened by new decisions", inherent to enacting desired values into a game (p. 758).

Implications for a Video Game to Promote Healthy, Equal Relationships

METRAC's RePlay Project seeks to create a video game about the prevention of violence towards girls; and to promote healthy relationships among children and youth, which are based on equality and respect. To this end, the literature and research about creating effective socially

oriented games provide important lessons. A violence prevention video game for Ontario youth ages 8 to 14 should:

- Include all of the key elements of play, rules, structure, feedback mechanisms, and player control that make games fun and engaging for their audience.
- Employ the basics of effective educational video games – including continual iteration and supplementary materials to help educators understand how to create a holistic learning environment to support the anti-violent lessons within the game.
- Contain non-violent, value-based content embedded into the very form of the game, so the finished product can be as 'content-free' as possible. At a basic level, the game's content should challenge mainstream notions of masculinity, femininity, normative abuse and violence, and gendered power dynamics, so that players can envision the possibility of healthy, equal relationships and a violence-free world.
- Adhere to principles of gender inclusive design to reduce typical barriers to girls' use of video games and to challenge social assumptions about the lesser value of girls' preferences, learning styles, and play.
- Be designed using a process inclusive of various stakeholder values, both hidden and readily apparent; resolving value conflicts where they exist; involving meaningful consultation and prototyping with the intended audience; and ultimately including key values without undermining the 'gameness' of the final product.

Section
6

RePlay Research with Ontario Youth

Introduction

At METRAC, we believe initiatives to prevent gender-based violence must be grounded in communities' thoughts, ideas, needs, and experiences. Therefore, the starting point for developing our RePlay video game was direct consultation with diverse children and youth ages 8 to 14 years across Ontario. Understanding the game playing needs and behaviours of these young people formed a solid foundation for the development of video games aimed at engaging and reflecting their main audience.

Research Methodology

Using two surveys – one for youth who only reported playing games in general and one for youth who reported playing video games – as well as group discussions, METRAC gathered youth opinions about their game playing behaviours and preferences. A survey for game playing only was used so as to not assume that all participants have access or desire to play video games. Additionally, it was deemed that data about youth play and playing behaviour would still be of benefit for the purposes of the research.

Ontario community-based organizations and schools were contacted to organize focus groups with their youth. Different techniques were used to conduct focus groups with younger children (8 to 10) and older children (11 to 14), and yet another was used where groups had combined participants (8 to 14). Focus groups were conducted with a total of 250 youth living in 9 different urban, rural, and suburban areas of Ontario. 234 of these youth participants filled out individual written surveys about their video game or game playing behaviours and preferences (57 game surveys, 177 video game surveys), and were also led in a group discussion as well. 16 participants did not fill out the written surveys as a result of concerns about learning disabilities and/or time constraints – however, these youth shared some of their thoughts and ideas through a facilitated group discussion.

It is important to note that out of the 234 collected surveys, 7 of them had discrepancies with respect to reported age – 2 of the video game respondents were slightly below 8 years of age, 2 were slightly over 14 years of age, and 3 did not write their ages on the survey forms. These discrepancies were accounted for and it was determined that they would not skew the results. In examining findings by age range, the 7 surveys were omitted from the count to bolster accuracy of analysis.

Focus group participants reflected a variety of ethno-cultural backgrounds, genders, abilities, income levels, and languages within Ontario's population. Diversity of participants is of key importance to this research, as the RePlay Project's goal is to create video games that are culturally competent. For a breakdown of survey participants with respect to age, gender and region, please see Appendix 2.

The two surveys consisted of 20 questions and 3 group discussion questions (Appendix 3). Participants were asked to complete the survey section individually and, after everyone had finished answering the questions on their own, a group discussion was held about what participants wanted in a video game and its characters. Generally, focus groups took approximately an hour and a half to complete.

Key Data

Video Game Playing Frequency

Data arising from focus group surveys and discussions revealed some important findings. First, it is enlightening to note that out of 234 survey participants, only 57 chose to fill out the game-only survey; in other words, 75.6% of youth participants identified themselves as video game players by choosing the video game survey. This is certainly in line with Canadian reports that suggest video game playing is increasingly popular and that, as a relatively new medium, it has become prevalent in the lives of children and youth.

Both girls and boys completed the video game survey, although the number of boys who filled it out (86.2%) exceeded the number of girls (62.5%). Also, of the younger group of participants (8 to 10 year olds), 67.6% chose to fill out the video game survey, compared to 82% of the older set of participants (11 to 14 year-olds). This may indicate that video game playing is more common amongst boys and older youth, perhaps reflecting increased popularity of the medium in those groups. It may also reflect greater access to video games amongst boys and older youth, including greater socialization towards video game playing and the fact that many games are specifically marketed to young men.

The top reason given for playing video games was "for fun" (68.9%), followed by "something to do when [they are] bored" (53.1%). A majority of respondents indicated that they play video games either every day (44.6%) or at least once a week (40.1%), and most said they play for more than an hour each time (40.6%). With respect to age, more of the younger group of respondents (8 to 10 year olds) play every day (54.9% compared to 39%) and for more than an hour (45.1% compared to 40%). When examining the responses according to gender, 53.6% of boys said they play every day, compared to 29.2% of girls, and more boys said they play for over an hour than girls (47.3% and 29.2% respectively).

With respect to repeat play, most video game survey participants indicated that they play games over and over at least some of the time (66.1% responded "sometimes" and 29.9% simply responded "yes"). 42.4% indicated that they do so to increase their playing skills, followed by "to get a higher score" (37.3%) and "because I like playing a game I know well (35.0%). These

findings are similar for children and youth who chose to complete the game-only survey; 98.2% indicated that they repeat playing a game at least sometimes, and they most often do so to "get better" at playing it (43.8%). This is certainly consistent with theories about play in general – elements of an enjoyable and 'addictive' game have less to do with the medium and more to do with features of the game that make it engaging and 'playable' for its audience.

Design Features

Questions in both surveys addressed issues of game design. It is clear that youth participants desire some control over what they play – in fact, 85.9% of video game survey respondents and 84.2% of game-only survey respondents said that they prefer playing games that move at a speed they choose and that have no time limit. Plus, the vast majority of respondents to the video game and game surveys said they prefer to be able to choose their play character, instead of having the game choose it for them (92.1% and 87.7% respectively).

With respect to video game themes, 55.9% of respondents said they liked adventure "a lot", and the same percentage said they liked sports themes "a lot"; however, both adventure and sports themes were more favoured by boys than girls (64.6% of those who said they liked adventure and 66.7% of those who liked sports "a lot" were boys). Girls' preferences were spread more consistently across many different themes, including "racing" and "mystery".

Overall, creative games were favoured by participants (44.1% indicated that they like them "a lot"), but trivia games were least preferred (only 13.0% said they liked them "a lot"). A large percentage of video game survey respondents (80.8%) and game-only survey respondents (63.2%) said they like action "a lot"; for video game respondents, this was followed by effects and graphics (68.4% indicated they like it "a lot"). Video game survey respondents also indicated that they liked team games that are played with other people (50.8%), suggesting a social nature to the way playing video games is perceived by children and youth.

When engaged in group discussion, participants were asked to give their ideas about the features of an ideal "fun video game that does not have any fighting or weapons" and the characters that would be in such a game. Answers that were offered suggested that the participants looked for:

- Fun and engaging features (e.g. interesting graphics, trivia, various levels)
- Sports-oriented themes
- Adventurous play including elements of mystery (e.g. treasure hunt)
- Fanciful elements (e.g. magic, special powers, animal characters)
- Ability be creative (e.g. Sims, building and design games, creating your own character).

Most groups had ideas for characters that were based on popular toys, cartoons, movies, and existing video games (e.g. Sponge Bob, Bratz, Barbie, James Bond).

Violent Content, Parental Knowledge, and Educational Games

Question 16 of the video game survey asked: "Do you play any video games that have fighting or weapons in them?", to which 80.2% of respondents said "yes". With respect to age, more of the older respondents (11 to 14 years old) indicated that they play games with fighting and or

weapons (91.0%) than the 8 to 10 year old respondents (64.8%). 55.9% of all video game survey respondents went on to say that they felt that "games with fighting and weapons are more fun", and 14.1% indicated that they cannot find games that "don't have fighting or weapons". From responses to other survey questions and group discussions, it seems very likely that some video games the children and youth participants play certainly do have violent content, but some do not – based on factors such as the range of video games available on the market, age ratings on games that can limit younger children's access, peer behaviour, and parental permission.

In terms of parents' knowledge of video games that children and youth play, 65.5% of respondents indicated that their parents know about all of them. 24.8% said that their parents know about some of the video games they play, and 7.9% said their parents "don't know about any of them". For 8 to 10 year olds and 11 to 14 year olds, those who reported that their parents know the video games they play are similar (66.2% and 64.0% respectively). However, numbers change between the age groups when examining parents' partial or lack of knowledge about video games their children play – in the 8 to 10 year old group, 14.1% reported that their parents "sort of" know the games they play, compared to 33.0% of the 11 to 14 year old group. Additionally, 10.0% of the 11 to 14 year olds and 5.6% of the 8 to 10 year olds said that their parents do not know about any of the video games they play.

The last question of the video game and game surveys asked participants if they think that "games that teach kids stuff can be fun to play too". 48.6% of video game survey respondents and 54.4% of game-only respondents answered affirmatively, whereas 32.8% of the video game respondents and 35.1% of the game respondents said that they were "unsure". In the follow-up question on both surveys, some participants indicated that if the game was interesting and engaging to youth, attaching educational messages would not be detrimental. Others believed that learning something new can be fun in and of itself. One respondent noted: "It all depends on what the game is based on and if it doesn't take the fun out of playing with information". Another explained that, "some games that teach you stuff can be fun too as long as you make it fun, and slip educational stuff in there".

Potential Challenges to Consider

There are some issues to consider when analyzing the data that arose out of the focus groups. These are some areas of challenge that could have had an impact on the participants' answers, especially considering that they are children and youth and have particular needs.

Two Surveys

After receiving an introduction and explanation of the two surveys, focus group participants were asked to self-select themselves for the game survey or the video game survey. However, there may have still been confusion about the difference between the two, as many of the children and youth who filled out the game survey seemed to do so with video games in mind. Some problems may have been due to the fact that the two surveys looked alike and have similar questions. Also, participants who completed the game survey may in fact play video games, but they may have chosen the game survey thinking that they do not play video games enough to warrant completing the video game survey.

Questions 16 to 18

The last few questions in both surveys may have also led to confusion as they were the only set that was linked to and dependent upon each other. Participants may have been confused about the wording of the questions, especially the idea that if they said "no" to question 16, they would only have to fill out question 17, and if they said "yes" to question 16, they would only have to fill out question 18. This may have impacted their ability to effectively answer questions 17 and 18, in particular.

Sense of Belonging

Since participants completed the individual surveys and discussed their ideas aloud in the larger groups, an element of 'peer pressure' could have affected some of the answers. Although efforts were made to minimize it both on the survey and group discussion level through mechanisms such as having a game-only survey, there may have been social pressure on participants to report playing video games in a particular way. For instance, some participants might have wanted to avoid being left out of the video game discussions with their peers, perhaps inflating how often they had access to and played video games themselves.

Pressure to Perform

As is the case in many institutional contexts, children and youth are often pressured to 'perform' when asked questions from adults and authority figures. It can be intensified in institutional or quasi-institutional spaces, such as schools and structured after-school/homework community programs. This may have caused some of the participants to act and answer differently than they would have in other settings with other people. For instance, some may have felt more inclined to report playing games without violent content because they were answering questions in the presence of adults who might have frowned upon those kinds of games.

Key Learnings

Key learnings that emerged from the RePlay research are very much in line with the findings and recommendations that emerged from the literature review:

Learning 1: Video game playing is common, with differences for age and gender groups

In confirmation of numerous studies and statistics about youth consumption of media, this research demonstrates that video game playing seems to be a common phenomenon and is significant in the lives of children and youth on a daily basis. The fact that 75.6% of participants self-identified as video game players is an important finding. Additionally, the research suggests that more boys play video games at a higher frequency and for longer periods of time than girls. This information can impact RePlay game design in various ways, reflecting a need to connect with boys (11 to 14 year olds) as a significant portion of the game playing audience, on top of the need to make the game of particular relevance to the experiences of girls, who may be less likely to play video games because of socialization and male-oriented marketing.

Findings also demonstrate that younger children (8 to 10 year olds) play video games every day and for more than an hour at a time. Again, this has impact upon RePlay's game design for the younger group – for instance, it is all the more important that a game targeted to this age group be 'repeatable' and consistently engaging over longer stretches.

Learning 2: Youth want control and ownership over what they play

A majority of respondents indicated they prefer to set the pace of a game themselves and choose their own character to play, an indicator that they want control over various elements of the video games they play. It suggests that children and youth desire a degree of 'ownership' over their play and the ability to play on their own terms. The desire for ownership is similarly reflected in research finding that most respondents repeat playing a game at least some of the time – they seem to want to build their capacity and success in the course of playing something over and over again. In this case, it is important that the RePlay Project's video games allow a level of control for players and is designed to let them grow and achieve goals as they move through the game.

Learning 3: Youth like adventure and action

The research strongly indicates that youth like action and adventure within a game, not necessarily violent content, fighting, and weapons. However, their options within mainstream gaming may be limited – there may not be a wealth of games that are adventurous, action-packed, exciting, and that, at the same time, do not include violent content. This may be confirmed by the number of youth participants who indicated they were "unsure" if an educational game could be fun to play. Indeed, most forms of mainstream media connect excitement to violence in an inextricable manner that becomes very difficult to envision differently. However, many of the focus group respondents did indicate that they believed a game could be educational and enjoyable, stressing that it must not impart information or knowledge-building at the expense of fun.

Section 7

Appendixes

Appendix 1: RePlay Intersectoral Advisory Committee and Consortium Partners

An Intersectoral Advisory Committee (IAC) provided guidance and feedback for all project activities and participated in each stage of the project's development. IAC members are:

- ThinData Inc. (online sector)
- Sequentia Communications (online sector)
- Creneaux Enterprises (gaming sector)
- Taking IT Global (community youth online sector)
- Jewish Family & Child Services of Greater Toronto (community sector)
- Somali Family & Child Skills Development Services (community sector)
- Vietnamese Youth Community & Social Services (community sector)
- Alliances Consulting Group Inc (parent representatives)
- Toronto District School Board (educational sector)
- Ontario Institute for Studies in Education of the University of Toronto (OISE) (educational sector)
- Ontario Teachers' Federation (OTF/FEO) (educational sector)
- Minwaashin Lodge Aboriginal Women's Support Group (community sector)
- Nishnawbe Aski Nation (community sector)
- Disabled Women's Network of Ontario (DAWN) (community sector)
- Child Development Institute (community sector)
- Yorktown Family and Child Services (community sector)
- Speers Society (parent representatives)
- Faculty of Education, York University (community sector)

The RePlay Positive Video Gaming Project was developed as one of several projects of a consortium of agencies including METRAC, Springtide Resources, White Ribbon Campaign, and the Centre for Research and Education on Violence Against Women and Children.

Appendix 2: Breakdown of Survey Participants

Ontario Region	Games Survey	Video Games Survey	Totals
City of Toronto (including downtown and 'inner suburb' locations)	25	43	68
Baltimore	14	14	28
Brantford	7	51	58
Kenora	5	36	41
Newmarket	0	7	7
Niagara Region	6	26	32
Totals	**57**	**177**	**234**

Appendix 3: Video Game Written Survey, Game-Only Written Survey, and Discussion Questions

i. Video Game Written Survey

We would like to ask you questions about if you:

- Play video games
- Why you like or don't like video games

Please DO NOT WRITE YOUR NAME on this sheet. There are no right or wrong answers. This isn't a test and you won't get graded for filling it out. You won't be asked about your answers. Thank you for your help!

1. What is your gender? □ Girl □ Boy

2. How old are you? I am _____ years old

3. Why do you play video games?
□ They are fun
□ They give me something to do when I'm bored
□ My friends/family play them
□ Other (write your answer):

4. How often do you play video games?
□ Every day
□ At least once a week
□ At least once a month
□ Never

5. Where do you play video games?
□ At home
□ At a friend's house
□ At a family member's house (e.g. aunts, uncles, cousins)
□ At school
□ Other (write your answer):

6. How do you play video games?
□ I play alone
□ I play with friends and/or family members
□ I play online with multiple players

7. How long do you spend playing games each day?
□ Under 15 minutes
□ 15-30 minutes
□ 30-60 minutes
□ Over 60 minutes

8. Do you like playing the same video game over and over again?
□ Yes
□ Sometimes
□ No

9. Why do you play video games over and over?
□ To get a higher score
□ To see if I can get better playing it
□ Because I like playing a game I know well
□ Other (write answer):

10. What are the names of some video games you like to play?

11. Do you like playing games that?
□ Have a time limit
□ Move at a speed that I choose (no time limit)

12. Do you like?
□ Being able to choose what character you play as
□ Having the game choose a character to play as

13. What do you like in a video game? Pick a box for each word:

I like adventure:	□ a little	□ sort of	□ a lot
I like racing:	□ a little	□ sort of	□ a lot
I like sports:	□ a little	□ sort of	□ a lot
I like mystery:	□ a little	□ sort of	□ a lot
I like team games:	□ a little	□ sort of	□ a lot
I like trivia games:	□ a little	□ sort of	□ a lot
I like creative games:	□ a little	□ sort of	□ a lot

14. What's important to you in a game? Pick a box for each word:

I like effects (graphics):	□ a little	□ sort of	□ a lot
I like action:	□ a little	□ sort of	□ a lot
I like figuring out stuff:	□ a little	□ sort of	□ a lot
I like a good story:	□ a little	□ sort of	□ a lot
I like a fast pace:	□ a little	□ sort of	□ a lot

15. Do your parents know which video games you play?
□ Yes, my parents know about all of them
□ Sort of, my parents know about some of them
□ No, my parents don't know about any of them

16. Do you play any video games that don't have fighting or weapons in it (like punching, fighting, killing, guns)? □ Yes □ No

17. If NO to question 16: Why do you play video games that DON'T have fighting or weapons?
□ I don't think games have to have fighting or weapons to be fun
□ I'm not allowed to play games with fighting or weapons
□ Other (write your answer):

18. If YES to question 16: Why do you play video games that HAVE fighting or weapons?
□ I can't find games that don't have fighting or weapons
□ I think games with fighting or weapons are more fun
□ Other (write your answer):

19. Write the names of games you play that DON'T have fighting or weapons:

20. Do you think video games that teach kids stuff can be fun to play too?
□ Yes □ No □ I'm not sure

Explain your answer:

ii. Game-Only Written Survey

We would like to ask you questions:

- If you play games
- Why you like or don't like them

Please DO NOT WRITE YOUR NAME on this sheet. There are no right or wrong answers. This isn't a test and you won't get graded for filling it out. You won't be asked about your answers. Thank you for your help!

1. What is your gender? □ Girl □ Boy

2. How old are you? I am _____ years old

3. Why do you play games?
 They are fun
 They give me something to do when I'm bored
 My friends/family play them
 Other (write your answer):

4. How often do you play games?
 Every day
 At least once a week
 At least once a month
 Never
5. Where do you play games?
 At home
 At a friend's house
 At a family member's house (e.g. aunts, uncles, cousins)
 At school
 Other (write your answer):

6. How do you play games?
 I play alone
 I play with friends and/or family members
 I play online with multiple players

7. How long do you spend playing games each day?
 Under 15 minutes
 15-30 minutes
 30-60 minutes
 Over 60 minutes

8. Do you like playing the same game over and over again?
 Yes
 Sometimes
 No

9. Why do you play games over and over?
 To get a higher score
 To see if I can get better playing it
 Because I like playing a game I know well
 Other (write answer):

10. What are the names of some of the games you like to play?

11. Do you like playing games that?
 Have a time limit
 Move at a speed that I choose (no time limit)

12. Do you like?
 Being able to choose what character you play as

□ Having the game choose a character to play as

13. What do you like in a game? Pick a box for each word:

I like adventure :	□ a little	□ sort of	□ a lot
I like racing:	□ a little	□ sort of	□ a lot
I like sports:	□ a little	□ sort of	□ a lot
I like mystery:	□ a little	□ sort of	□ a lot
I like team games:	□ a little	□ sort of	□ a lot
I like trivia games:	□ a little	□ sort of	□ a lot
I like creative games:	□ a little	□ sort of	□ a lot

14. What's important to you in a game? Pick a box for each word:

I like effects (graphics):	□ a little	□ sort of	□ a lot
I like action:	□ a little	□ sort of	□ a lot
I like figuring out stuff:	□ a little	□ sort of	□ a lot
I like a good story:	□ a little	□ sort of	□ a lot
I like a fast pace:	□ a little	□ sort of	□ a lot

15. Do your parents know which games you play?
□ Yes, my parents know about all of them
□ Sort of, my parents know about some of them
□ No, my parents don't know about any of them

16. Do you play any games that have fighting or weapons in it (like punching, fighting, killing, guns)? □ Yes □ No

17. If NO to question 16: Why do you play games that DON'T have fighting or weapons?
□ I think games don't have to have fighting or weapons to be fun
□ I'm not allowed to play games with fighting or weapons
□ Other (write your answer):

18. If YES to question 16: Why do you play games that DO have fighting or weapons?
□ I can't find games that don't have fighting or weapons
□ I think games with fighting or weapons are more fun
□ Other (write your answer):

19. Write the names of games you play that don't have fighting or weapons:

20. Do you think games that teach kids stuff can be fun to play too?
□ Yes □ No □ I'm not sure

Explain your answer:

iii. Discussion Questions for all Participants

1. Imagine a fun video game that does not have any fighting or weapons. What would you want it to include? For example:

- lots of sound effects
- cool colourful graphics
- choose-your-own-adventure
- more examples?

2. If you could design a main character for your game that has no fighting or weapons, what would you want him/her/it to look like? (Please be as descriptive as possible.)

3. Add more information about what you think about playing video games.

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