Violent video gaming and moral reasoning in adolescents: is there an association?

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In this study of 109 adolescents from the eighth grade of seven public elementary schools in Canada, the relationship between adolescents’ violent video game playing patterns, habits and attitudes, and their levels of moral reasoning was investigated. The results suggested that playing violent video games in general was a very popular activity among the adolescents. The results demonstrated the significant negative relationship between adolescents’ amount of time playing violent video games during the day and their sociomoral maturity based on their scores on The Sociomoral Reflection Measure. The findings are put into the educational and the context of normal development, and suggestions are given for parents, for educators and for future violent video game research.

Keywords: adolescence, violent video games, moral reasoning, education

Introduction

Concerns about violence in the media and its potential impact on children’s behaviors and attitudes are not new. Researchers expressed concern about the violence portrayed in the popular screen media and the possible harm these portrayals might have on children (Anderson et al., 2003; Anderson & Bushman, 2001; Berkowitz, 1984; Huesmann & Taylor, 2003; Wagner, 2004). Previous studies found that children who spend significant amount of time watching violence presented in some television shows or movies are more likely to exhibit aggressive behavior and may experience violent tendencies in their attitudes and values in real life (Bushman & Anderson, 2009; Dahlberg & Potter, 2001).

There is also an expressed fear that exposure to media violence may influence children’s moral development (Krcmar & Curtis, 2003; Vieira & Krcmar, 2011; Wilson, 2008). Krcmar and Curtis argued that the exposure to television violence could affect children’s moral reasoning in real-life situations that are similar to those seen on television. They found that children who watched a lot of violence on television used less advanced moral reasoning strategies in explaining their judgments when asked to differentiate between fantasy violence and violence seen in more realistic television shows.

Time spent viewing television as a primary activity has declined lately due to the increased popularity of video games among children and youth (Ivory, Williams,
A Kaiser Family Foundation survey (Roberts, Foehr, & Rideout, 2005) in USA found that 77% of boys in grades 7–12 had played a game in the Grand Theft Auto series and nearly half (49%) had played a game in the popular Madden NFL series. The latest research also stated that the most preferred video games are the ones with fantasy and human violence, such as Mortal Combat, Grand Theft Auto, Grand Turismo, and NHL series. (Olson et al., 2007; Pollon, 2003; The Canadian Teachers’ Federation, 2005). Drawing on research conducted on the possible harmful effects of television and movies on children’s behavior and moral reasoning, there is a likelihood that exposure to violent video games may produce similar negative effects (Anderson & Bushman, 2001; Funk, Baldacci, Pasold & Baumgardner, 2004; Gentile & Gentile, 2008; Subrahmanyam, Kraut, Greenfield, & Gross, 2000). Eron (2001) reported that exposure to violence in video games may influence the development of moral reasoning because, in such games, violence is not only presented as acceptable, but is also justified and rewarded. According to Eron, empathy and attitudes toward violence are important components of the process of moral reasoning, and if cognitive desensitization happens due to overexposure to violent video games it may later lead to stronger proviolence attitudes. It is then possible that, for some children, immersion in violent video games may result in the development of scripts for aggression that bypass the typical process of moral evaluation. Although research in this area is limited, the most recent research on violent video games and moral reasoning conducted by Vieira and Krcmar (2011) found that violent video gaming was negatively related to children’s perspective-taking and ability to sympathize, both of which are very important in the process of moral reasoning. According to these findings, violent video game playing may have some influence on the development of moral reasoning.

Moral development in adolescence

According to moral development theories, adolescence is a stage of life when major changes in moral development take place (Gibbs, 2003; Kohlberg, 1984; Piaget, 1965). At this stage, adolescents tend to believe that good behavior means having good intentions and interpersonal feelings, such as empathy, trust, and concern for others. Piaget (1965) and Kohlberg (1984) proposed that children usually develop more mature moral judgment in the natural course of interactions with others. This mature moral judgment involves a growing ability to take the perspective of others. Gibbs conceptualized Kohlberg’s main stages as developmental levels of moral immaturity and maturity or sociomoral justification stages (Gibbs, Basinger, & fuller, 1992). Stages 1 and 2 represent immature or superficial moral judgment typical for younger children age 5–12, while Stages 3 and 4 represent mature or profound moral judgment expected to be formed at adolescence and last throughout adulthood. These four stages are summarized as follows:

Stage 1. Power: “Might makes right.” Morality is whatever big or powerful people say that you have to do. If you are in charge, whatever you do is right and whatever you get is fair. At this stage, children do not understand the moral reasons for rules; it is wrong only if you get punished.

Stage 2. The deals: Morality at this stage is an exchange of favors (e.g. “pay them back” or “do to them before they do to you”). They think they have the right to do what they want and that authority should not “boss anybody around.”
Judgment is more psychological, but still superficial in a pragmatic way. A child might justify keeping promises so that others will “keep their promises to me” or “treat me nice and not get mad.”

Stage 3. Mutuality: At this stage, moral judgment advances beyond pragmatic thinking to a perspective of mutual trust. Piaget (1932) described this as “reciprocity as an ideal” or “do as you would be done by” (p. 323). By caring about others and treating them fairly, people feel part of a community of belonging.

Stage 4. Systems: At this stage, the individual comes to appreciate the need for universal, consistent standards of interdependence. Morality is grounded in a deep commitment to justice and caring. Honoring commitments becomes the measure of self-respect, even if retaining integrity means becoming unpopular.

Adolescents who have not advanced in moral judgment beyond Stage 2 usually have not had enough opportunities to take the roles or consider the perspective of others. He called it a “moral judgment delay.” Individuals who were morally mature generally used Stage 3 reasons. For example, the selfishness of lawbreaking and the resulting chaos that can further cause insecurity, or even loss of trust in the world. In contrast, children who were morally immature used reasoning that generally appealed to the risk of being caught and going to be punished (Stage 2).

**Video games genre**
A video game genre refers to a particular type or classification of video games (Surette, 2002). Most video games fall within a particular genre, although some of them bridge different gaming styles and could appear under more than one category. To an educator interested in the educational value of digital gaming, a genre-based taxonomy of videogames can be instrumental in the recognition of games that have the cognitive impact on gamers. The video game genre taxonomy is presented in the Table 1 on page 5 and 6.

**Violent video games definition**
By definition, violent video games include depictions of or simulations of human-on-human violence in which the player kills or otherwise causes serious physical harm to another human; serious physical harm includes depictions of death, dismemberment, amputation, decapitation, maiming, disfigurement, mutilation of body parts, or rape (Anderson & Bushman, 2001; Funk et al., 2004). For instance, in a first-person shooter video game, *Call of Duty: Black Ops*, players assume the role of Alex Mason, a soldier who works for the CIA and participates in both well-known and secret events during the Cold War (e.g. stealth espionage, assassinations, and interrogations involving torture). Players use a wide variety of weapons, such as pistols, rifles, machine guns, and explosives to injure/kill enemies. Players can use enemy bodies as human shields and execute them at close range. In one sequence, broken glass is placed into the mouth of a man while he is repeatedly punched, causing blood to spill from his mouth.
Video games in an educational context

While violent video games have been a source of concern, some video games have the potential to positively influence the cognitive development. Prensky (2001) stated that well-designed video games provide the player with clear objectives that are adaptable to the learning pace of the viewer. In the attempt to reach these objectives, not only do video games reinforce mastery of their material through immediate and constant feedback but they also provide extrinsic reinforcement.

<table>
<thead>
<tr>
<th>Genre</th>
<th>Description</th>
<th>Video games</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-person-Shooter</td>
<td>The player controls an environment from a first-person perspective and is required to shoot everyone and blow everything whenever possible (Ernest &amp; Rollings, 2006)</td>
<td>Doom, Descent, Marathon, Halo, Quake, Call of Duty series, Grand Theft Auto series</td>
</tr>
<tr>
<td>Adventure</td>
<td>The progression is based on puzzles and ability keys as the primary form of progression. An ability key gives the player an ability which allows them to overcome a specific type of obstacle and, therefore, access to the new areas (Ernest &amp; Rollings, 2006)</td>
<td>Lucas Arts, Cyan, Gabriel Knight, Indiana Jones, The Legend of Zelda, Monkey Island</td>
</tr>
<tr>
<td>Platform</td>
<td>Platform genre video games are identified by navigating environments that require timing and jumping in order to reach a destination while avoiding and/or disposing of enemies (Ernest &amp; Rollings, 2006)</td>
<td>Pac-Man World, Spyro the Dragon, Bubble Bobble, Donkey Kong, Super Mario Bros.</td>
</tr>
<tr>
<td>Role-Playing</td>
<td>These games incorporate three major elements: a specific quest; a process for evolving a character through experience to improve his/her ability to handle deadlier foes; and the careful acquisition of inventory items for the quest (Ernest &amp; Rollings, 2006)</td>
<td>Final Fantasy, Shadows of Darkens, Dragon Warrior</td>
</tr>
<tr>
<td>Simulations</td>
<td>Simulation genre video games are designed to accurately recreate a real-life experience. Online simulation games allow a person to inspire and be inspired by other players’ creations or test strategies against them (Ernest &amp; Rollings, 2006).</td>
<td>The SimCity, Grand Tursimo, Spore, The Sims</td>
</tr>
<tr>
<td>Dance/rhythm</td>
<td>These games require the player to input rhythms by stepping with their feet on a dance pad, or using a device similar to a specific musical instrument, like a guitar or drum set (Ernest &amp; Rollings, 2006)</td>
<td>Guitar Hero, Rock Band, Sing Star.</td>
</tr>
<tr>
<td>Survival/horror</td>
<td>Players need to survive or overcome the environment that includes fantastic or supernatural elements that are very frightening. Many of these titles are rated mature and are not intended for younger audiences because of disturbing graphic scenes (Ernest &amp; Rollings, 2006)</td>
<td>Resident Evil, Silent Hill, Fatal Frame, Doom</td>
</tr>
</tbody>
</table>
Research confirmed that even violent video games, when put into the educational context, may have the potential to be used as training aids in classrooms and therapeutic settings, and to provide skills in psychomotor coordination in simulations of real-life events; for example, training recruits for the armed forces (Anderson & Bushman, 2001; Griffiths, Davies, & Chappell, 2004). A number of studies, both experimental and correlational, found that playing violent video games is associated with higher visuospatial acuity, perception, processing, visual memory, and mental rotation (Feng, Spence, & Pratt, 2007; Ferguson, 2011).

The new literacy advocates, such as Gee (2007), Pahl (2006), and Prensky (2001) explained that the millennials, as they called this new generation, have been born in a world where traditional/print literacy no longer determines the course of cultural, political, and general societal development. Today’s young learners, therefore, require a new framework for literacy instruction, which acknowledges both the fluid and dynamic nature of literacy, whose meanings are subject to change according to the cultural context and societal needs (Bandura, 2001). And bringing video games in our classrooms will, indeed, fulfill these social needs within the cultural context.

**Video game playing concerns**

As video game playing becomes increasingly popular among children, parents and teachers continually express fear about not knowing what video games children are playing and about what effect violent video games may have on them. Parents feel increasingly victimized by a culture of violence presented in video games (Cantor & Wilson, 2003). Cantor and Wilson found that a majority of children reported that their parents do not impose a time limit on the number of hours they are allowed to play video games, and most parents are unaware of the content or the ESRB rating of the video games their children play.

Biglan (2004) argued that parents who know what their children are doing are able to detect when they are drifting into activities that might pose a risk. Prohibiting adolescents from playing violent video games is not realistic, but the awareness of what kind of video games their children are playing and for how many hours may allow parents to better understand the video games they play, to discuss the games, and to set time limits if necessary. Hence, there is a need for providing parents with the information about violent video games in general and the possible effects that those video games may or may not have on their children’s attitudes, behavior, and moral development (Cantor & Wilson, 2003). Only informed parents will be able to make sound decisions about their children’s leisure time, and only then will they be able to avoid the influence of moral panic created around violent video games (Ferguson, 2011; Ferguson & Kilburn, 2010). Shaffer, Squire, Halverson and Gee (2005) also expressed concern that teachers do not have enough awareness about video games. They stated:

However, even if we had the world’s best educational games produced and ready for parents, teachers, and students to buy and play, it is not clear that most educators or schools would know what to do with them. Although the majority of students play video games, the majority of teachers do not. (p. 26)
Therefore, major efforts should be made to educate teachers about (a) the types of games accessible to their students, (b) the violent content that those games contain, and (c) the possible effects those kinds of games may have on their students’ attitudes and behavior. Research implied that teachers’ awareness about video games in general and about students’ video game playing patterns and habits may help teachers and students in deconstructing the meanings behind video game messages, and even inspire the incorporation of some of the games in everyday classroom activities (Bajovic & Elliott, 2011; Cantor & Wilson, 2003; Gentile, Lynch, Linder, & Walsh, 2004; VanDeventer & White, 2002).

While some research has been done on the possible consequences of playing violent video games on children’s behaviors and attitudes, very little academic research has focused on the potential relationship among adolescents’ violent video game playing patterns and habits and their moral development. The purpose of this study, therefore, was to explore the possible association between violent video game playing patterns and habits and the levels of moral maturity in adolescents. In the present study, two primary research questions were addressed:

Q1: What are adolescents’ video game playing patterns and habits?
Q2: Is there an association between adolescents’ violent and nonviolent video game playing patterns and habits and their levels of moral reasoning/maturity?

Method

Participants

Participants in this study were 109 grade 8 students, 61 boys and 48 girls, aged between 13 and 14 from seven public elementary schools in Ontario, Canada.

Instruments

A self-reporting pencil and paper questionnaire with 21 questions, seven pages long, was designed to determine participants’ video game playing patterns and habits. This questionnaire was based on the Media Self-Report Questionnaire (Elliott, 2006) used in longitudinal project investigating children’s media preferences and habits across various media modalities and the impact of media on values, beliefs, and worldviews. The present research study replicated and updated the questions that focused on video games patterns and habits. Prior to data collection, the modified self-reporting questionnaire was pilot tested for clarity and six adolescents were recruited through the researcher’s acquaintance. The six adolescents (age 13) were contacted by phone and the researcher explained the purpose of the questionnaire and asked them if they were willing to complete it. The researcher also explained that they did not need to submit finished questionnaires to the researcher and that the main purpose was checking for clarity. Upon agreement, the questionnaires were emailed to them and they were asked to read each question carefully for understanding. After they finished, they called the researcher and described their overall experience with each question. According to their responses, none of the questions appeared confusing or unclear. The self-reported questionnaire used in this study contained closed and open-ended questions, and Likert scale-type questions. Closed questions provided a limited choice with Yes or No responses (e.g. Do you play video games?, Have you ever played any violent video games?, etc.) Closed questions asked specific, narrow questions and enabled collection of numerical data from participants. Likert
scale-type questions were in the form of statements and the participants decided how strongly they agree or disagree with the statements provided (e.g. I play video games because: It is fun; it is exciting, etc.). Data gained from a Likert-type scale were quantitative data that provided information about how strongly a participant felt about video games patterns, habits, and attitudes. Open-ended questions were also provided to give an opportunity for participants to provide the choices not offered in the questionnaire.

The questions from self-reporting questionnaire analyzed for the purpose of this study were: do you play video games? How often do you play video games? (with the choices specified as: for one hour, two hours, three or more hours a day, a week, a month, and on the weekends). What are your two favorite video games? and which video games do you play most often? The main purpose of the self-reporting questionnaire was to determine adolescents’ video game playing patterns and habits. After the analyses of the results obtained with the self-reporting questionnaire, it was possible to determine and identify the violent and nonviolent group of video game players.

**Sociomoral reflection objective measure-short form (SRM-SF)**

The SRM-SF; Gibbs et al. (1992) elicits the reasons concerning moral values that are representative of the moral domain: life, law, affiliation, contract, truth, and social justice. The SRM-SF uses 11 brief, lead-in statements (e.g. “Let’s say a friend of yours needs help and may even die, and you’re the only person who can save him or her”). The lead-in statements are followed by evaluation questions; for example, “How important is it for a person (without losing his or her own life) to save the life of a friend? Circle one: very important/important/not important.” The adolescents were also asked to elaborate on their statements and the elaborative answers were used for coding and the analyses. Responses to the SRM-SF questions were scored by consulting the appropriate chapter in the reference manual provided by the author of the instrument. The basic idea of SRM-SF scoring is to assess the developmental level of questionnaire responses in accordance with the criteria in the reference manual.

All 11 items are scored, and the summary of all scores were calculated, and the primary score in the SRMS-SF assessment represented the sociomoral reflection maturity level based on the mean of all items scored. The levels of sociomoral maturity ranged from the Immaturity level, which represents Stage 1 (Unilateral and Physical) and Stage 2 (Exchanging and Instrumental), to the Maturity level which represents Stage 3 (Mutual and Prosocial) and Stage 4 (Systematic and Standard). The SRM–SF evidences acceptable levels of reliability (intrarater, test–retest, internal consistency) and validity (criterion-related, construct). For example, the SRM–SF demonstrated good concurrent validity ($r = .69$) with the Moral Judgment Interview instrument (Colby & Kohlberg, 1987), and comparable age trends in samples from Italy (Gielen, Comunian, & Antoni, 1994), Northern Ireland, and Sweden (Ferguson, McLernon, & Cairns, 1994). The measure correlates with theoretically relevant variables, such as social perspective-taking (Mason & Gibbs, 1993) and prosocial behavior (Gielen, Comunian, & Antoni, 1994). Its discriminant validity is supported by its consistent identification of the samples as developmentally delayed in moral judgment (Gavaghan, Arnold, & Gibbs, 1983; Gregg, Gibbs, & Basinger, 1994). Relative to the Moral Judgment Interview instrument (Colby & Kohlberg,
1987), the SRM-SF is group-administrable, takes less time to complete, requires less inferential scoring time (25 to 30 min vs. 30 to 60 min to score a transcribed Moral Judgment Interview instrument protocol), and is accompanied by adequate self-training materials.

Results

Preliminary analyses

The quantitative data from self-reporting questionnaire were entered and analyzed in the Statistical Package for Social Science (SPSS). In order to determine participants’ video game playing patterns and habits, a descriptive statistical procedure was employed aiming to quantitatively summarize a data-set (Creswell, 2008; Creswell & Plano Clark, 2007). In order to establish the amount of time that participants spent on playing video games, a descriptive statistics procedure of frequency distribution and cross tabulation was performed. In order to determine the relationship between amount of participants’ violent video game time played and SRMS scores, a bivariate correlation procedure was performed. Independent samples’ T-test was performed to establish if the participants in the violent video playing group significantly differ in SRMS scores by the hours of play of violent video games per day.

The results are organized into two sections aligned with two research questions.

Q1: What are adolescents’ video game playing patterns and habits?

In order to determine adolescents’ video game playing patterns and habits, a frequency counts were employed to analyze questions from self-reporting questionnaire related to adolescents’ self-declared video game playing patterns and habits. According to the results, 96 (88%) adolescents reported playing video games, while 13 (12%) declared that they did not play video games at all. Based on the results, 59 (54%) adolescents declared playing video games every day from one hour to three or more hours. In the group that declared playing video games every other day for one hour, there were 21 (19%) adolescents. There were 30 (28%) adolescents who declared playing video games a few times a month for two hours, and 32 (29%) who declared playing video games only on weekends for one hour. Thus, more than a half of all the adolescents (54%) declared playing video games every day between one and three or more hours a day. The results are presented in Table 2.

A frequency analysis was performed to determine how frequently the adolescents declared playing a certain type of video game. A 3-point frequency scale included answers often, rarely, never. The following choices of video games were offered: Call of Duty: Modern Warfare, FIFA10, NHL series, Need for Speed, Super Mario Galaxy 2, Rock Band 3, Grand Theft Auto: San Andreas, Sims, Prince of Persia:

<table>
<thead>
<tr>
<th></th>
<th>1 hour, n (%)</th>
<th>2 hours, n (%)</th>
<th>3 or more hours, n (%)</th>
<th>Total, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every day</td>
<td>25 (23)</td>
<td>26 (24)</td>
<td>8 (7)</td>
<td>59 (54)</td>
</tr>
<tr>
<td>Every other day</td>
<td>6 (5)</td>
<td>7 (6)</td>
<td>8 (7)</td>
<td>21 (19)</td>
</tr>
<tr>
<td>Few times per week</td>
<td>13 (12)</td>
<td>13 (12)</td>
<td>8 (7)</td>
<td>34 (31)</td>
</tr>
<tr>
<td>Few times a month</td>
<td>15 (14)</td>
<td>7 (6)</td>
<td>8 (7)</td>
<td>30 (27)</td>
</tr>
<tr>
<td>On weekend</td>
<td>13 (12)</td>
<td>4 (3)</td>
<td>15 (14)</td>
<td>32 (29)</td>
</tr>
</tbody>
</table>
The Forgotten Sands, Monster Hunter Tri, Madden NFL, and Word of Warcraft. The offered choices of video games were based on the previous research on most popular video games among children and adolescents (http://Gamerankings.com; Olson et al., 2007; The Canadian Teachers’ Federation, 2005; The Media Awareness Network, 2005). An open-ended question was also provided to enable adolescents to write video game choices other than those offered in the questionnaire. According to the results, the games that were played most often were: Call of Duty series (33%), Super Mario series (23%), NHL series (16%), Grand Theft Auto series (16%), The Sims (12%), Rock Band 3 (12%), Madden NFL (12%), and Halo (12%). The results revealed that the most popular and most played video games are the first-person shooter genre video games (Call of Duty series), the platform genre (Super Mario series), and the sports genre (NHL and NFL series). The results are presented in Table 3.

<table>
<thead>
<tr>
<th>Video games</th>
<th>Often</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call of Duty series</td>
<td>35</td>
<td>31</td>
<td>42</td>
</tr>
<tr>
<td>Super Mario series</td>
<td>25</td>
<td>28</td>
<td>70</td>
</tr>
<tr>
<td>NHL series</td>
<td>15</td>
<td>27</td>
<td>64</td>
</tr>
<tr>
<td>Grand Theft Auto series</td>
<td>15</td>
<td>24</td>
<td>64</td>
</tr>
<tr>
<td>The Sims</td>
<td>13</td>
<td>25</td>
<td>71</td>
</tr>
<tr>
<td>Madden NFL</td>
<td>13</td>
<td>17</td>
<td>79</td>
</tr>
<tr>
<td>Rock Band 3</td>
<td>13</td>
<td>35</td>
<td>71</td>
</tr>
<tr>
<td>Halo</td>
<td>13</td>
<td>33</td>
<td>65</td>
</tr>
</tbody>
</table>

Q2: Is there an association between adolescents’ violent and nonviolent video game playing patterns and habits and their levels of moral reasoning/maturity?

In order to determine associations between the amounts of time adolescents spend in play violent video games and their levels of socimoral maturity, an analysis of bivariate correlation was performed. There were 45 adolescents identified as violent video game players. The Pearson’s $r$ for the correlation between the amount of time playing violent video games and the scores on SRMS was $r = -.324$, $p = .04$ ($p < .05$) showing that there was a strong, negative correlation between two variables. The significant (2 tail) value $p = .04$ demonstrated that the correlation

### Table 3. Frequency of video games played.

<table>
<thead>
<tr>
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<tr>
<td>Halo</td>
<td>13</td>
<td>33</td>
<td>65</td>
</tr>
</tbody>
</table>
between the amount of time playing violent video games and the scores on SRMS was statistically significant. The results indicated that increase or decrease in the amount of time playing violent video games significantly relates to higher or lower scores on SRMS test. The results are presented in Table 4.

In order to further explain this finding, an independent samples T-test was performed to establish if the adolescents in the violent video playing group significantly differ in SRMS scores by the hours of play a day. The amount of time playing violent video games in the violent video game playing group was based on three categories: one hour a day, two hours a day, and three or more hours a day. The mean on SRMS scores for adolescents who played violent video games for one hour was $M = 2.85$; the mean on SRMS scores for adolescents who played violent video games for two hours was $M = 2.76$; the mean on SRMS scores for adolescents who played violent video games for three or more hours was $M = 2.30$. The results indicated that there was significant difference $t(45) = 2.09, p = .021 (p < .05)$ between adolescents who played violent video games for one hour a day and adolescents who played violent video games for three or more hours a day on their SRMS scores. There was no significant difference in SRMS scores between adolescents who played violent video games for one hour a day and those who played for two hours a day $t(45) = 1.19, p = .240$, and for adolescents who play violent video games for two hours a day and for three hours a day $t(45) = 1.20, p = .231$. Therefore, adolescents who played violent video games for three or more hours significantly differ on SRMS scores only from adolescents who played violent video games for one hour a day.

A bivariate correlation procedure was also performed to determine the relationship between levels of adolescents’ sociomoral reasoning and the amount of time they spent playing nonviolent video games. The Pearson’s $r$ for the correlation between the amount of time playing nonviolent video games and the scores on SRMS was $r = .157, p = .651 (p < .05)$ showing that there was no correlation between the amount of time adolescents’ reporting playing nonviolent video games and the scores on SRMS.

**Discussion**

The purpose of the present study was to determine adolescents’ video game playing patterns and habits and to examine whether there was an association between adolescents’ violent video game playing patterns and habits and their level of sociomoral reasoning. The majority of adolescents in the present study declared playing video games which goes in line with previous research findings stating that

<table>
<thead>
<tr>
<th>Amount of violent game play per day</th>
<th>SRMS Correlation</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRMS</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.04</td>
</tr>
<tr>
<td>Amount of violent game play per day</td>
<td>Pearson Correlation</td>
<td>$- .324^{a}$</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.04</td>
</tr>
</tbody>
</table>

*aCorrelation is significant at the .05 level (2-tailed).*
playing video games has one of the most popular activities among adolescents (Olson et al., 2007; Roberts et al., 2005; The Canadian Teachers’ Federation, 2005; The Media Awareness Network, 2005). The results of the present study were also in line with previous research about the amount of hours spent on playing video games (Olson et al., 2007; Roberts et al., 2005). More than a half of all adolescents in the present study declared playing video games every day from 1–3 or more hours a day. The latest research posited that the most preferred video games are ones with human violence, with a general entertainment theme, and with sports themes (Bajovic, 2006; Pollon, 2003; The Canadian Teachers’ Federation, 2005). The present results confirmed that favorite video games for these group of adolescents were first-person shooter genre (e.g. *Call of Duty* series), the sports genre (e.g. *NHL* and *NFL* series), platform genre (e.g. *Super Mario* series), and simulation genre (e.g. *The Sims*).

Previous studies on media violence and moral reasoning found that watching a great deal of violence on television or movies may hinder children’s moral development and that some children who were exposed to media violence may use less advanced moral reasoning skills (Eron, 2001; Funk et al., 2004; Krcmar & Vieira, 2005; Krcmar & Curtis, 2003). Based on the results in the present study, it can be speculated that it was the prolonged amount of playing violent video games that might hinder moral development in some adolescents. The present results indicate that some adolescents in the violent video game playing group who spent three or more hours a day playing video games scored at the lower level (Stage 2) of sociomoral maturity. Gibbs believed that most adolescents should be reaching Stage 3 of moral maturity which is characterized by advanced moral judgment and mutual caring and trust. Kohlberg (1984) believed that at the conventional morality stage, adolescents become more serious about morality and they start to believe that good behavior means having good motives and interpersonal feelings, such as love, empathy, trust, and concern for others. According to Gibbs, adolescents who have not advanced in moral judgment beyond Stage 2 are at the “moral judgment delay” stage and usually have not had enough opportunities to take different roles or consider the perspective of others in real life. The present results indicate that some adolescents in the violent video game playing group, who spent three or more hours a day playing violent video games, while assumingly detached from the outside world, are deprived of such opportunities.

**Implications**

In summary, the present findings suggest that playing violent video games may hinder moral development in some adolescents. However, not all adolescents who played violent video games demonstrated lower level of sociomoral maturity. Only those adolescents who declared playing violent video games for prolonged hours demonstrated a tendency to score at the lower level of sociomoral maturity. It can be speculated here that spending too much time within the virtual world of violence may prevent them from getting involved in different positive social experiences in real life, and in developing a positive sense of what is right or wrong. Different social opportunities are important as they promote development by stimulating mental processes and children’s moral development depends on their role in different social contexts (Bandura, 1989; Kohlberg, 1984; Nucci, 1997). This is where teachers, parents, and students should start working collaboratively in providing
those missing opportunities. It can be suggested that working collaboratively to create opportunities for children’s participation in charity work, in community involvement, and in extracurricular activities will provide them with different perspectives and positive role taking opportunities. Piaget (1965) emphasized the importance of school environment in children’s moral development stating that schools should work on cooperative decision-making and problem-solving, nurturing moral development by requiring students to work out common rules based on fairness. In the context of video game playing, teachers are required, first, to understand the content of video games and the story line in the game and, second, to initiate discussions about video games in the classroom. Through this dialog, they can guide children to differentiate between right and wrong within the stories depicted in video games.

Character education should also serve to further enhance moral skills, such as sensitivity to others, and care for both others and self (Bajovic & Elliott, 2011). Within the context of schools, the teachers are responsible for creating a moral community, in which students learn to respect and care about each other so that everyone feels valued within the group, and for that they need opportunities to develop their intuitions in well-structured environments that provide guidance for developing proper ethical skills (Lickona, 2008; Narvaez, 2002; Noddings, 2006). Thus, teachers need more opportunities through professional development to learn about video games and to directly experience video game playing in order to perceive the possible applications of such tools in the classrooms. It is important for teachers to be informed about the possible effects of video games in order to avoid the influences on media moral panics related to the portrayal of violent video games in the media (Kirkland, 2009; Schrader, Zheng, & Young, 2006).

Another important skill that children need to develop through critical media literacy and character education is the ability to understand the relationship among the common good, the good of others, and the individual good (Bajovic & Elliott, 2011). It is of essence that everyday social and educational experiences contain moral dimensions; thus, both moral literacy and critical media literacy should involve the analysis of the violent video game messages as well as underlying issues of moral values and beliefs presented in these games. There should be no desire to stop children from playing video games, but opportunities can be created in and out of school to enhance their ability to become tolerant and compassionate in helping others and themselves.

**Future research**

Future research can expand these findings in a variety of ways. One direction for future research may involve investigation of how other individual variables, such as personality, socioeconomic status, and family situation, may mitigate the effects of violent video game playing on real aggression. Another way to extend present findings is to utilize a longitudinal design to measure possible violent video game effects. It is possible that children are more affected by violent video game playing over time. In clarifying present findings, it would also help to investigate the possible reasons for lower scores on sociomoral maturity test. And finally, this research can be extended in measuring the effects of different programs and strategies utilized through character education to remediate moral developmental delay in children. As Gibbs (2003) stated, through adequate programs created to help children, it is possible to stimulate more mature understanding with respect to values, such as...
helping others, peer or family relationships, resisting drugs, and preventing suicide, or saving a life. It would also be beneficial for future research to further explore teachers and parents’ levels of awareness about violent video games. This study indicated that parents and teachers need additional knowledge about the violent video game content and the nature of the violence presented in the games.

References


