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# Relationships between the Attitude toward Video Games and Use of the Video Game Rating System in Global Markets\*

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As video games gain popularity and become a normal part of home entertainment, concern about youth access to inappropriate games continues to grow. Some people have claimed that violent video games influence children's aggressive behavior and that violent video games have some responsibility for violence in the school. In response to people's concerns, the video game industry created a video game rating system in 1995 to help parents decide which video games are appropriate for their children.

This study investigated whether parents were aware of the video game rating system and how often they have used it when selecting video games for their children. This study attempted to find relationships among parents' attitudes toward video games, their guidance styles for their children's video game play, and their use of the video game rating system.

This study found that most parents have used the video game ratings very frequently when they select video games for their children. But many parents still don't understand the video game rating system. This study showed that parents who had more negative attitudes or less positive attitudes toward video games were more likely to impose restrictions on their children's video game play and to use the video game rating system as a means to restrict their children's access to violent video games.

Key words: Parents' Attitude toward Video Game, Video Game Rating System

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# I. Introduction

The development of technology and the advent of new media such as video games have changed children's media consumption patterns and have affected their beliefs, behavior and futures. These days, video games have become a popular form of home entertainment market. In the fourth quarter of 2006 there were 45.7 million homes with video game consoles, representing 41.1% of all TV households (Gyimesi 2007). According to the NPD Group, Inc., which provides market information about fashion, food, entertainment, house, automobile, and technology industries, the video game industry is the fastest-growing facet of the entertainment industry. Retail sales of video game hardware, software and accessories increased 43% in the U.S. in 2001 versus the previous year. The total U.S. video game industry grew from \$6.6 billion in 2000 to \$9.4 billion in 2001. In terms of revenues, the game industry has been growing faster than any other part of the entertainment business during the past five years (NPD Group, Inc. 2002).

However, some people have claimed that violent video games influence children's aggressive behavior and that they have some responsibility for violence in the school. A \$5 billion civil lawsuit filed in the Federal District Court in Denver on behalf of some of the victims of the Columbine High School massacre accused 25 game hardware

and software manufacturers of making and marketing video games that "teach children to kill" (Porterfield 2001). In addition, many studies argued that parents have responsibility for their children's access to the violent video games and should take responsibility for their children's media consumption and access to the violent games because most children cannot help but depend on their parents when they choose video games (Newson 1996).

In response to people's concerns about the effects of violent video games on children, video and computer game software manufacturers established the Entertainment Software Rating Board (ESRB) to create a video game rating system in 1995. The Entertainment Software Rating Board (ESRB) assumes that adults are capable of deciding what video games they should buy and play and that children don't have the ability to select appropriate video games. Thus, the purpose of the rating system is to give parents sufficient information to determine whether any game is appropriate for their children. According to Abelman (1998), parents who are concerned about the impact of television on their children use the TV rating system to guide their children's television viewing. Parents' attitudes toward video games might influence their guidance styles of children's video game play and use of the video game rating system.

Therefore, parental awareness of these ratings is critical to controlling children's exposure to

such violent video games; otherwise, they may just be used by children to find the most violent games (Bushman and Huesmann 2001). The present study addresses the following research inquires with regard to the video game rating system (VGRS) and parents' attitudes toward video games (PATVG): (a) to examine parents' awareness of VGRS, (b) to detect how often parents use VGRS when they buy or rent video games for their children, (c) to understand a relationship between parents' usage of VGRS and their opinions about the rating information, and (d) to illustrate the relationships among PATVG and their children's video game play, their guidance styles of children's video game play, parents' usage of VGRS, and parents' attitudes about the content regulation of video games.

## II. Literature Review

### 2.1 Impact of Video Games

Most previous research on the impact of video games was related to children or adolescents. Even though many people are concerned about the negative impact of violent video games, there is no clear evidence at this time that violent video games affect children or adolescents negatively.

Some studies offered support that violent

video games affected the people (e.g., Anderson and Bushman 2001; Anderson and Dill 2000; Anderson and Ford 1986; Anderson and Morrow 1995; Calvert and Tan 1994; Chambers and Ascione 1987; Cooper and Mackie 1986; Fling, et al. 1992; Griffiths and Dancaster 1995; Irwin and Gross 1995; Robinson et al. 2001; Schutte, et al. 1988; Silvern and Williamson 1987) while others failed to find a positive relationship between video games and people's responses (e.g., Ballard and Wiest 1996; Dominick 1984; Fleming and Rickwood, 2001; Scott 1995; Winkel, Novak and Hopson 1987).

Many variables are involved in the impact of violent video games. Variables include gender, age, violent content, expressed hostility (feelings of aggressiveness) versus exhibited aggression (overt behavior), the behavioral measurement (e.g., toward a life-size dole, or in terms of shocks administered form a n aggression machine), and personality traits (e.g., Anderson and Morrow 1995; Fleming and Rickwood 2001; Griffiths and Dancaster 1995; Irwin and Gross 1995; Scott 1995; Winkel, Novak and Hopson 1987). It seems reasonable to assume that the inconsistency of previous findings due not only to inadequate consideration of what constitutes aggressiveness but also to personality differences (Scott 1995). In the case of some research, the sample size might be extremely small thus it reduced the external validity.

However, new video games with improved graphics and more realistic violence are constantly

being developed. To evaluate the impact of violent video games on children and youth, one must consider the techniques which the games use. Unfortunately, many studies were performed before 1993, when violent content and realistic images began to increase sharply (Song and Anderson 2001). It is unreasonable to apply the earlier studies to the current conditions.

## 2.2 Video Rating System

The purpose of the ESRB rating system is to help parents decide which video games are appropriate for their children. The ESRB has therefore developed the rating system which specifies recommended age ranges - ratings fall into five age-base categories: (1) Early Childhood, or "EC" (ages 3+), (2) Everyone, or "E" (ages 6+), which was called to Kids to Adult, or "K-A" before January 1, 1998, (3) Teen, or "T" (ages 13+), (4) Mature, or "M" (ages 17+), and (5) Adult Only, or "AO" (limited to those ages 18 and older) - for video and computer games based on the amount of violence, sexual explicitness, and foul language contained in each game. There is also a Rating Pending category ("RP") to indicate that a games has been submitted to, but not yet rated by, the ESRB. The ESRB defines the current rating icons as follows:

Since the introduction of ESRB system in 1994, there have been controversial and frequently debated issues in the validity of ESRB system.

Walsh and Gentile (2001) examined 55 adults rated 166 video games using a "Kidscore" media evolution system and compared the ESRB industry ratings with the ratings conducted by the 55 adults. The result of this study showed that the ESRB ratings are less strict than ratings that the consumers gave with the same games. The authors suggested that the rating systems of media such as television, movies, and video games need a consistent ratings system to help parents to use ratings more effectively. According to Walsh's (2001) research, parents found 13% of the E-rated games were not appropriate for children aged 3-7. Parents rated 31% of "T" (Teen) rated games as "M" (Mature). This result showed that industry ratings are too lenient for rating games compared with parents and supported the previous research (e.g., Funk et al. 1999; Walsh and Gentile 2001). The result of this study showed that 55% of parents were aware of video game rating systems and 54% of parents followed the rating decisions.

However, the survey of Interactive Digital Software Associate (IDSA) produced different findings from other academic research. According to a survey of 1999, 80% of the subjects who were told about the ESRB rating system said that it would be helpful or very helpful. A different survey conducted in July 2000 found that the ESRB rating was twice as likely to be more conservative than the public's rating. The survey of 410 adults showed that "in 84% of

<Table 1> Definition of Alphabetical Age Ratings

	<p><b>EARLY CHILDHOOD</b> Content may be suitable for ages 3 and older. Contains no material that parents would find inappropriate.</p>
	<p><b>EVERYONE</b> Content may be suitable for ages 6 and older. May contain minimal violence and some comic mischief or crude language.</p>
	<p><b>TEEN</b> Content may be suitable for ages 13 and older. May contain violent content, mild or strong language, and/or suggestive themes.</p>
	<p><b>MATURE</b> Content may be suitable for ages 17 and older. May contain mature sexual themes or more intense violence or language.</p>
	<p><b>ADULTS ONLY</b> Content suitable only for adults. May include graphic depictions of sex and/or violence. Not intended for persons under the age of 18.</p>
	<p><b>RATING PENDING</b> Product has been submitted to the ESRB and is awaiting final rating.</p>

all instances, games are rated equal to or less strictly than the official ESRB ratings” (IDSA, 2001a).

### 2.3 Parents’ Guidance Style of Children’s Game Play and TV Viewing

As with television, it might be impossible to

block children’s access to violent video games. Sneed and Runco (1992) compared the beliefs held by parents, other adults, and children about the influence of video games. They showed that the subjects thought video games had both “desirable” and “undesirable” impacts. However, many parents are concerned about the violent video games and the amount of

time kids spend playing games. Forty three percent of the parents worry that children's video game play interferes with other activities and schoolwork (Walsh 2000). They believed that limiting playing time and monitoring game selection are important to protect children, and reducing video game use decreases aggressive behavior in children (Funk 1993; Robison et al. 2001).

van der Voort, Nikken, and van Lil (1992) found that parents who most strongly believed that television has a negative impact on children were most likely to employ restrictive guidance methods. Parents with negative attitudes toward violent television used active and restrictive guidance styles of their children's television watching, and believed that violent content on television can harm their children (Nathanson 2001). Skoien and Berthelsen (1996) also argued that parents who had negative beliefs about video games were more likely to talk about video games to their children. Parents who believed that their children spent too much time playing video games were more likely to restrict children's video game play.

Funk, Hagan, and Schimming (1999) investigated relationship between parents' attitudes and knowledge of children's video game usage. They found that parents and children have different perceptions about parental supervision and their children's favorite games. The parents' responses about the amount of supervision time were larger than children's reported. They also showed

that parents had a higher "frustration" than their children after playing the same video game. This study mentioned that parents' higher frustration prevented them from understanding their children's video game play habits. They suggested that a video game rating system might be useful for parents who didn't play video games.

### III. Research Hypotheses

The purpose of the video game rating system is to give parents sufficient information to decide which video games are appropriate for their children. The video game industry provides that information, including short phrase called content descriptors that provide detailed information on the game's content to help parents select video games for their children. Therefore, this study attempts to investigate if the video game rating system achieves its purpose. Each parent has different attitudes toward video games and their children's play. This study assumes that the parents' different attitudes and usage of the rating system are due to their different perceptions about video games.

According to previous study (Walsh 2000) and the industry survey (e.g., IDSA 2001a), the number of people who were aware of the video VGRS has grown. Awareness of the rating system is a basic condition to achieve

the purpose of the rating system. The precise measure of the rating system's achievement is the parents' actual usage of the rating system. This study attempts to measure the parents' perceptions about video games and the rating system. Also the following hypotheses will investigate the relationship between parents' attitudes toward video games and actual usage of the rating system.

The survey conducted the FTC (2000), parents who reported using the video game rating system said the rating information "easy" to understand and had favorable opinions about rating information. Therefore, the following hypothesis is postulated:

H1: The parents' actual use of the rating system is related to their opinions of the rating information.

Parents have different views about the content of video games and their children's video game play. Children's video game play habits have something to do with their Parents' different beliefs about video games. Valerio, Amodio, Zio, Vianello, and Zacchello (1997) showed that the parents' attitude about TV is related to children's television watching habits. Therefore, this present research applies the following hypothesis

H2: The parents' attitudes toward video games are correlated with amount of

children's time and money spent on video games.

Valerio, Amodio, Zio, Vianello, and Zacchello (1997) pointed that and parental attitude affect the programs of television viewed children and the most frequent way in which parents were involved in children's television watching was limit or prohibition of specific programs. The studies above lead us to expect parents' attitudes toward video games and guidance methods, and their children's favorite video games will be related as follows:

H3a: There will be differences in parents' attitudes toward video games between parents whose children's favorite video games are violent and those whose children's favorite video games are non-violent.

H3b: There will be difference in parents' guidance of children video game play between parents whose children's favorite video games are violent and those whose children's favorite video games are non-violent.

Playing video games is no longer a pastime just for children. The number of older people who play video games has increased. According to Skoien and Berthelsen (1996), parents who have grown up without playing video games are less likely to believe in the benefits of

video games. Experience with video games may influence parental beliefs about video games. Parents who play or played before will have positive attitudes toward video games and their children's play.

H4: Parent's video game experience is correlated with their positive attitudes toward video games.

Playing video games has both desirable and undesirable effects. Each parent has different beliefs about the impacts of video games. The studies on parental guidance of children's television viewing (e.g., Bybee et al. 1982; van der Voort et al. 1992) showed that parents who believed that television has negative effects on children more likely to restrict children's television viewing. Parents who are concerned about the ill effects of video games try to shield their children from negative effects by restricting children's playing. Skoien and Berthelsen (1996) postulated that parental beliefs about video games affect how they guide their children's play.

H5: The more negative attitude parents have toward video games, the more restrictive they are to their children's video game play.

According to the survey conducted by Peter D. Hart Research Associate, Inc (1996), Parents

thought the V-chip as a tool to select good quality program and discourage their children from watching inappropriate program. Abelman (1998) pointed out that parents who are concerned about the effects of television on their children were more likely to use the TV rating system. He stated that most concerns were related to negative consequences of television viewing. The present study assumes that parents concerned about the negative effects of video games will use the rating system as a way to restrict children's access to some video games.

H6: The more negative attitude parents have toward video games, the more frequently they will use the video game rating system when they choose appropriate video games for their children.

H7: The more negative attitude parents have toward video games, the more favorable they are to content regulation of video games.

## IV. Method

### 4.1 Procedure

Participating parents of children were recruited through enrolled a developmental research schools system associated with a large southeastern

university in U.S. The school encompasses elementary, middle, and high school. After getting permission from the principal and teachers at the school, permission (consent) was obtained from parents. The survey questionnaire was distributed by teachers to the children who were instructed to deliver them to their parents. All parents participating in this study were given one week to complete and return the survey. Of the 650 parents initially contacted, 162 parents participated in the survey.

## 4.2 Measures

Four constructs are examined in this study: the parents' awareness of the video game rating system, value of rating information and usage (i.e., parents' opinion about rating information and actual use of the rating system), supervision (i.e., parents to report on their children's video game play and their guidance practices), and parents' attitudes toward video games (PATVG) and content regulation of video games.

After examining parents' awareness of the video game rating system (e.g., "Were you aware of the video game rating system?") using seven-point scale ranging from "1=Not at all" to "7=Very aware," subjects were directly asked to report on how well the respondents knew about the rating system such as E, K-A, T, M, and AO, and to write down the meaning of the five Alphabetical ratings if they knew the meaning of those ratings.

The value of rating information scale items ("alphabetical age ratings" and "content descriptors") were constructed through five items (Importance, Usefulness, Credibility, Clarity, and Accuracy). To recognize parents' experience using the rating system, six items were asked (e.g., three items for "usage frequency of the rating system," and the rest for "frequency of purchase or rental of video games rated as inappropriate for their children" and "frequency of refusing to buy or rent due to the rating information"). Either 7-point Likert or 7-semantic-differential scales were used measured all constructs.

Children's six categories (sports, general entertainment, educational, fantasy violence, human violence, and violent sports) were taken from previously validated measure in the literature (Funk and Buchman 1995) to classify the majority of children's game. Skoien and Berthelsen's (1996) work also inspired the indicators of parental guidance of children's video game play. The guidance scale employed a seven-point scale with response options ranging from "1=Never" to "7=Always."

Eight statements about the possible effects of video games (e.g., negative or positive effect) were adopted from van der Voort et al's (1992) study, which was about children's television viewing, and modified to reflect the nature of video games. To examine parents' attitudes toward government regulation of video games and the current rating system based on age, respondents were asked to

indicate their level of agreement with four statements: (a) Parents' responsibility to control violent video games (CVVG), (b) Game industry's responsibility to CVVG, (c) Federal and State government' responsibility to CVVG, and (d) Console manufactures' responsibility to CVVG. All indicators were measured using seven-point Likert scales ranging from strongly disagree to strongly agree.

## V. Results

### 5.1 Parents Profile

The gender distribution in the sample was not even. Among 162 parents, 75.9% were female, while 24.1% were male. Respondents ranged in age from 27 to 73. However, 87% of respondents belonged to the age range of 31 - 50. Each household has an average of 2.08 children. The children of respondents ranged in age from four months to 27 years. Sixty-six percent of respondents answered that their household income was more than \$50,000. Representing a cross section of the population

in the area where the school located, the school has 66% Caucasian, 25% African American and 9% Hispanic parents.

In this study, 65 parents (40%) answered that they were very aware of the video game rating system. This study showed 107 parents (66%) were highly aware and 21 parents (13%) had low awareness of the rating system, while 34 parents (21%) answered that they were not aware of it at all. Fifty-one parents (32%) said they knew the meaning of the specific age ratings such as "E", "K-A", "T", "M", and "AO". About 64% of respondents answered that their children's favorite video game type is non-violent video games while 36% said that video games with violent content were their children's favorite game. About 85% of parents answered that they strongly agree the statement that "parents have the responsibility to control violent video games".

### 5.2 Parental Opinion and Use of the Rating System.

<Table 2> shows the correlation between parental opinion and usage of the rating system. Parents' actual usage of age ratings is

<Table 2> Correlation between Parents' Opinions & Use of Rating System

	Opinion about age ratings	Opinion about content descriptors
Use of age ratings	.64**	.42**
Use of content descriptors	.41**	.41**

\*\* Correlation is significant at the 0.01 level (2-tailed)

associated with their favorable opinions about alphabetical age ratings ( $r = .64, p < .01$ ) and parents' actual usage of the content descriptors is related to their favorable opinions about content descriptors ( $r = .41, p < .01$ ). These four variables were also significantly associated with one another in a positive direction. Therefore Hypothesis 1 was supported.

### 5.3 Parents' Attitudes and Their Children's Play

The results of <Table 3> show that parents' positive attitude toward video games is positively associated with the amount of their children's time spent on video games ( $r = .16, p < .05$ ). While parents' negative attitude toward video games doesn't have any significant relationship with the amount of their children's time and

money spent on video games and their positive attitude is not associated with the amount of their children's money spent on video games. Therefore hypothesis 2 is partially supported in this study.

### 5.4 Parents' Attitudes and Children's Favorite Video Game

<Table 4> shows the difference of parents' attitude toward video games between the two groups (non-violent video game and violent video game). Parents whose children's favorite video game type is non-violent ( $M=5.51, SD=1.60$ ) have a higher negative attitude toward video games than those whose children's favorite type is violent ( $M=4.09, SD=1.53$ ). There is a significant difference in negative attitude toward video games while there is no significant

<Table 3> Correlation between Parents' Attitudes toward Video Games & the Amount of Time & Money Spent on Video Games

	Amount of time spent on video games	Amount of money on video games
Negative attitude	.13	.01
Positive attitude	.16*	.45

\* Correlation is significant at the 0.05 level (2-tailed)

<Table 4> Parents' Attitudes toward Video Games & Children's Favorite Video Game Type

	Negative Attitude		Positive Attitude	
	M	SD	M	SD
Non violent video game (N=93)	5.51	1.60	2.49	1.27
Violent video game (N=52)	4.90	1.53	2.77	1.07

Note: Negative and positive attitude scales range from 1 to 7.

difference in positive attitude toward video game ( $t(144) = 2.25, p < .026$ ). However, the test of positive attitude is not significant ( $t(144) = -1.36, p = .173$ ). Therefore the Hypothesis 3a is partially supported.

Parents whose children's favorite video game type is non-violent ( $M = 5.02, SD = 1.74$ ) are more likely to use restrictive guidance than those whose children's favorite type is violent ( $M = 4.26, SD = 1.92$ ). There is significant difference in parental restrictive guidance of their children's video game play ( $t(143) = 2.41, p < .017$ ), while there is no significant difference in non-restrictive guidance ( $t(144) = .83, p = .406$ ). For the comparison of non-restrictive guidance, these two groups didn't differ. This result partially supports the Hypothesis 3b as dose Hypothesis 3a (See <Table 5>).

## 5.5 Parents' Video Game Experience and Their Attitudes

Both parents' negative and positive attitudes are significantly correlated with their video game experience. As this study expected, parents' video game experience is significantly associated with their positive attitude toward video games ( $r = .51, p < .01$ ) and with their negative attitude toward video games ( $r = -.636, p < .01$ ). The result shows that parents' video game experience has a stronger correlation with positive attitude than with negative attitude. (See the below <Table 6>).

## 5.6 Parents' Attitudes and Guidance Style

Parents' negative attitude toward video games has positive correlation with their restrictive guidance style of children's video game play ( $r = .54, p < .01$ ) and parents' positive attitude

<Table 5> Parents' Guidance Style of Children's Video Game Play & Children's Favorite Video Game Type

	Restrictive Guidance		Non restrictive Guidance	
	M	SD	M	SD
Non violent Video Game (N=93)	5.02	1.74	2.54	1.35
Violent Video Game (N=53)	4.26	1.92	2.36	1.17

Note: both restrictive and non-restrictive guidance scales range from 1 to 7.

<Table 6> Correlation between Parents' Attitudes & Video Game Experience

	Negative attitude	Positive attitude
Video game experience	.36**	.51**

\*\* Correlation is significant at the 0.01 level (2-tailed)

toward video games is related to their restrictive guidance style of children's video game play in a negative direction ( $r = -.47, p < .01$ ). This result implies that the more negative parents are toward video games, the more restrictive they are to their children's video game play. Therefore Hypothesis 5 is supported.

### 5.7 Parents' Attitudes and Use of Rating System

Parents' negative attitude toward video games is significantly correlated with both parents' actual usage of age ratings ( $r = .38, p < .01$ )

and parental usage of content descriptors ( $r = .42, p < .01$ ) in a positive direction. Parent's positive attitude toward video games has a significant relationship with their use of age ratings ( $r = -.38, p < .01$ ) and content descriptors ( $r = -.33, p < .01$ ) in a negative direction. This implies that the more negative parents are toward video games, the more likely they are to use the rating system.

### 5.8 Parents' Attitudes and Content Regulation

Parents' negative attitude is related to government

<Table 7> Correlation between Parents' Attitudes & Guidance Style

	Restrictive guidance
Negative attitude	.54**
Positive attitude	.47**

\*\* Correlation is significant at the 0.01 level (2-tailed)

<Table 8> Correlation between Parents' Attitudes & Use of the Rating System

	Use of age ratings	Use of content descriptors
Negative attitude	.38**	.42**
Positive attitude	.38**	.33**

\*\* Correlation is significant at the 0.01 level (2-tailed)

<Table 9> Correlation between Parents' Attitudes toward Video Games & their opinions about Government Regulation & Age Regulation

	Government regulation	Age regulation
Negative attitude	.44**	.60**
Positive attitude	.26**	.35**

\*\* Correlation is significant at the 0.01 level (2-tailed)

regulation ( $r = .44, p < .01$ ) and age regulation ( $r = .60, p < .01$ ). Even though the content regulation of video games based on age is not now conducted by federal or state government, parents who have more negative views about video games have more favorable attitude toward content regulation conducted by the government. As expected, parents' positive attitude is related to government regulation ( $r = -.26, p < .01$ ) and age regulation ( $r = -.35, p < .01$ ) in a negative direction. This study shows that the more positive parents are toward video games, the more unfavorable they are to content regulation.

## VI. Summary

While gaming technology advances and video games have become a normal part of youth entertainment, concern about youth access to inappropriate games continues to grow. Most parents believe that video games have a more negative impact on children rather than a positive impact. They believe that playing video games increases aggressive behavior, which causes psychological anxiety and reduces pro-social behavior. Parents' guidance style was related to the belief that video games are harmful to their children. Parents who have more negative attitudes toward video games are more likely to restrict their children's video

game play than those who have less negative views about video games. The reason is probably why parents who have negative views about video games are highly motivated to protect their children from the harmful effects of video games and hope to reduce children's access to violent video games by imposing restrictions on their children's video game play. This is consistent with previous studies (Skoiien and Berthelsen 1996) and research dealing with guidance style of television viewing (Bybee et al. 1982; Nathanson 2001).

Parents whose children's favorite video game type is non-violent have a higher negative attitude toward video games than those whose children's favorite type is violent. Hence, parents who have a more negative attitude toward video games control the video game type played by forbidding the play of violent games and specifying the video games played as non-violent video games. Parents who have more positive or less negative attitudes toward video games are likely to be involved in their children's video game play, by discussing video games with their children, encouraging playing games and playing games together. Because parents who have a higher positive attitude toward video games impose less control on their children's video game playing, their children play video games longer than other children did.

Parents' restrictive guidance style reflects not only their attitude toward video games but their experience with video games. Experience

with video games influences parents' attitudes toward video games. Parents with a higher degree of video game experience are more likely to have positive attitudes, as a result, they are less likely to restrict their children's video game play, and more likely to discuss video games with their children, encourage playing games and play games together. Parents who were children or adolescents when video games emerged in the 1970s and early 1980s have grown up with the circumstances of video games. As the number of parents who have experience with video game has increased, parents' attitudes toward video game may become more favorable than now. Parents may get more involved with and impose fewer restrictions on their children's video game play.

Parents who have a more negative attitude toward video games are more likely to use the video game rating system than parents who have a less negative attitude when deciding which video games are appropriate for their children. Parents use the video game rating system as a way of limiting children's access to violent video games and restricting children's video game play. Even though parents believe that they take the most responsibility in shielding their children from ill effects of some video games and in supervising their children's video game play, parents with higher negative views about video games are likely to favor governmental regulation and content regulation based on age.

## VII. Limitation and Future Research

A critical limitation of this study is related to the sample in this study. The convenience sampling used in this study doesn't represent all parents. The question of generalization remains uncertain. The survey participants in this study overwhelmingly consist of females (mothers). This was due to the fact that mothers generally take more responsibility and spend more time caring for their children (van der Voort et al. 1992). Video game playing is more popular among the males than the female. Males play video games more frequently and indicate that they would like to spend more of their free time playing video games than females did (Barnett et al. 1997). In addition, there is a high possibility that mothers who have less video game experience have more negative views and less positive views about video games. The result of this study cannot be generalized to all parents.

The methodology of this study is problematic. The report depended on self-report measures and didn't measure actual behavior in a controlled experimental or in a natural environment. Some research shows that there was a difference between parental attitude and behavior, and children's perceptions about parental attitude and behavior. According to Walsh (2001), 53% of parents said that they put a time limit on

playing video games. But only 13% of eighth and ninth graders said their parent did. Fifty four percent of parents answered that they follow the ratings in making a purchase decision, but only 75 of the eighth and ninth graders said their parents have ever stopped them from buying a game because of the rating. Specifically, the parents' report about their children's video game play was limitation of this study because children often play video games without their parents. The reported amount of children's time spent on video games might be different from reality because the most popular video game console, Gameboy or Playstation (I & II), is handheld and could be played without parents' observation.

There might be a variety of factors influencing parents' attitudes besides video game experience. Further studies should investigate other possible factors that might affect parents' attitudes and guidance practices to gain a better understanding of parents' attitudes such as parents' and children's gender and age. Parents' attitudes and guidance styles are affected by children's sex and age. Parents are more lenient to boys rather than girls. As children grow up, parents become less concerned about children's play. Parents have different attitudes based on their children's sex (Skoien and Berthelsen, 1996).

It is necessary for further studies to compare perceptions about video games held by parents and children. Some research showed that parents and children had different perceptions about

children's video game play. The reason is probably that parental involvement in children's video games may be limited. Parents are not as involved in children's video game play as they are in television viewing and children often play video games without their parents' observation. Children might not think that playing video games is as harmful as parents might. Parents have different perceptions about fantasy violence. Parents considered fantasy violence as serious as real violence, while children enjoy cartoon violence without any distress or fear and subsequently forget it (Hargrave, 2000).

In this study, measures of parental attitudes and guidance styles were preliminary. The factor structure of the parental guidance scales of children's play was different from previous studies. To co-watch TV is a participative guidance activity for children's television viewing and regarded as a non-restrictive guidance style (van der Voort et al. 1992) and "to watch children's play" was regarded to be a non-restrictive guidance in the Skoien and Berthelsen's study (1996), which directly adapted van der Voort et al.' study (1992). However the watching children's play factor was observed as a restrictive guidance style in this study. Further study should seek a consistent factor structure to explain parental guidance style. Although the previous studies have focused on the violent content of video games and its negative impact on children, this study investigated the parental attitude toward video

games and the rating system and parents' actual usage of the rating system.

Although there has been much public concern about the negative effects of video games, a governmental policy solution to this problem is very difficult to imagine in the United States. America has a federal policy governing the use of the broadcasting spectrum as administered by the Federal Communications Commission. Unlike the broadcasting spectrum, which was designated as a public resource, the video game has been operated as a private enterprise and hence was not amendable to the same rationale used to justify governmental regulation of broadcasting. Any effort to control video game content has raised questions about violations of First Amendment rights. That is, we should recognize that video games are now a primary entertainment worldwide. The video game industry should provide a variety of good quality video games to their users and at the same time, provide parents with useful information in choosing appropriate video games for their children. Further research should investigate the shortfalls of the current system to generate a more effective rating system.

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