Are Video Games Harmful?

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A Unique Form of Entertainment

Video games allow players to do many things that are not acceptable in real life. For example, prize-winning writer Tom Bissell talks about a demo he attended for a video game called *Splinter Cell: Blacklist*. Bissell says that he was disturbed to find that the game prompts a player to torture another person in order to get information. He explains,

> I watched the *Splinter Cell* franchise's long-established hero, Sam Fisher . . . enter a tent, kill two gentlemen, and grab a third. Sam asks this third gentleman where a certain colleague of his might be. The gentleman declines to answer, so Sam sticks his knife into the gentleman's clavicle. The gamer is then given an onscreen prompt to twirl around his controller's joystick, which in turn twirls around Sam's knife in the gentleman's wound. The screaming gentleman gives Sam the info he needs.[1]

Bissell argues that torture is one of the worst things that a person can do, and says that he was extremely troubled to find such behavior encouraged in the game. He asks, "Inflicting pain and suffering on a captive human being because one person feels like it and the other can't stop it. . . . Is this not what we're told awaits sinners in hell? Is this not the domain of Satan?"[2]

Active Participation in Crime

Torturing other people is not the only thing video game players do that would be considered completely unacceptable in real life, and this has made gaming very controversial. Players routinely commit many types of crimes in the video game world, including killing other people. For example, the *Grand Theft Auto* games have generated controversy for allowing players to kill police officers, drive drunk, and have sex with prostitutes and

then kill them to get the player's money back. Critics wonder how playing at such activities affects people. There is heated debate over whether gaming is just mindless fun in a make-believe world, or whether the things people do in video games affect those players in real life. Further, if games do have lasting effects, most people want to know what these effects are.

What makes games particularly controversial is the fact that unlike other types of entertainment media such as movies and music, video games involve the active participation of the player; for instance, he or she actually puts himself or herself in the place of the character who is torturing another person. Award-winning writer Simon Parkin explains that with most types of media, a person is merely observing the action. He says, "When we watch a violent scene in a film or read a description of violence in a novel, no matter how graphic it is, we are merely spectators."[3] In contrast, he says, a video game story cannot take place without a player's active participation. He explains, "Often the game's story remains in stasis until we press the button to step off the sidewalk, light the cigarette, drunkenly turn the key in the ignition, or pull a yielding trigger."[4]

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>
> —Tom Bissell is a prize-winning video game enthusiast.

No Easy Answer

Yet not all games involve violence and crime. While there has been widespread public debate over the potential harms of games such as *Grand Theft Auto* and *Splinter Cell*, there has also been increasing interest in the potential of video games to influence players for good. Some people believe that their engaging and interactive nature makes video games a beneficial learning tool. For example, numerous teachers insist that when they utilize video games in the classroom, the interest and learning of their students is vastly improved. While most of this attention on video games for good is focused on less violent games,

there are those who argue that even violent shooter games have many benefits, such as improving cognitive function or helping people harmlessly release aggressive feelings.

There is no easy answer to the question of how video games affect players. Game experts Daphne Bavelier and C. Shawn Green point out that because video games vary greatly, so do their effects. They insist, "One can no more say what the effects of video games are, than one can say what the effects of food are. There are millions of individual games, hundreds of distinct genres and sub-genres, and

Teen boys play video games on vintage consoles at a conference in Milan, Italy, in 2014. These kinds of games have been popular among all ages since their invention, but many people worry that the more violent games may have harmful effects on some users.

they can be played on computers, consoles, hand-held devices and cell phones."[5] However, while it might be impossible to provide a simple answer to the question of whether or not video games are harmful, it is possible to gain a deeper understanding of how they might affect people. The issue is an important one, because research shows that gaming is a significant activity all over the world. Market research company Newzoo projects that in 2015, sales in the gaming market will reach $91.95 billion worldwide. With millions of people gaming and billions of dollars being spent on this activity every year, it is critically important to understand the potential harms and benefits of video games.

What Are the Facts?

Fourteen-year-old Will Davis likes to play video games, but he is not the only one in his family who plays them. His whole family enjoys regular game nights, when they get together in front of their flat-screen television and play *Mario Kart*. "It's cool to see my parents interested in things I'm interested in also," Davis comments. Journalist Megan Peters lives in Kansas City. She says that her whole family also plays video games together. According to Peters, *Minecraft* is one of their favorites, and gaming sessions can even involve friends from the neighborhood. "In fact," she says, "our house became a neighborhood hot spot as my husband set up several laptops and the local kids came over and played against each other in the same [*Minecraft*] world."[6] It is common to hear stories such as these, in which entire families and communities all enjoy video games. The Entertainment Software Association (ESA)—the US association that represents video game companies—estimates that four out of every five households in the United States has a device that is used to play video games. When researching the topic of video games, it quickly becomes apparent that gaming is an extremely widespread and popular activity. As ESA president and CEO Michael D. Gallagher insists, "Video games are ingrained in our culture."[7]

Gamer Statistics

Video games are popular in a variety of age groups and across different cultures throughout the world. In the United States, the ESA reports that about 155 million people—or 42 percent of the population—play video games regularly. Gamers range in age from very young children to the elderly; however, the organization finds that the average US gamer is thirty-five years old. The percentage of young people who play games is significantly higher than this average though. For instance, according to research conducted between 2014 and 2015 by the Pew Research Center, 72 percent of teens aged thirteen to seventeen play video

games. While the United States has a greater percentage of gamers than most other nations, video games are popular in cultures all over the world. Global gaming research company Newzoo reports that the United States is the largest game market in the world, however it also finds large numbers of gamers in Europe, Latin America, and Asia. According to a 2013 report from the Netherlands company Spil Games, overall more than 1.2 billion people play video games worldwide, or about 17 percent of the world's population.

Total numbers of male and female gamers are fairly similar in many cultures, with males only slightly outnumbering females. According to the ESA, in the United States 56 percent of players are male and 44 percent are female. A 2012 European study commissioned by the Interactive Software Federation of Europe found almost exactly the same percentages. Interviews were conducted in more than fifteen different European countries, and researchers found that about 55 percent of gamers were male and 45 percent were female. This similarity in gender percentages has not always been the case though; thirty years ago video game play was dominated by males. For instance, a number of surveys conducted in the 1980s found that females comprised less than 30 percent of the gaming population at that time. Female players have increased significantly only in recent years. This increase has been so large that now the number of female gamers in some age groups actually outnumbers male gamers. For example, Bas Seelen, vice president of advertising at Spil Games, reports that women age thirty-five and older often outnumber male gamers. He says, "In Turkey, Brazil, Netherlands, US, UK, and France, there are more women over 35 gaming than men. In fact, an astonishing 73% of Turkish women aged 35–44 play online games."[8]

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Research shows that not only are more females playing, but video game play is steadily infiltrating every segment of the

A little girl plays Minecraft, one of the most popular video games of all time. It, like many other video games, allows players to compete against their families and even entire communities. The popularity of multiplayer games like Minecraft has led experts to conclude that video games are fully ingrained in American culture.

population. A huge variety of different types of video games are now available, and due to the proliferation of mobile devices, it is becoming increasingly easy to play these games. As a result of increased accessibility and variety, it is very common for all types and ages of people to play video games. Communications expert Lian Amaris explains that while in the past there were fewer game types and most had limited appeal, this dynamic has changed. She says, "The kinds of gaming experiences that are out there are so varied and appeal to so many different audiences. It's a vastly different landscape than you had just a few years ago."[9] Writer Andrew Leonard agrees. He insists that gam-

ing is rapidly becoming something that almost everyone does. He says, "Increasingly, it seems weird to even talk about 'gaming culture.' It's *the culture,* period."[10] ESA statistics offer confirmation that video game play is common among all age groups. According to its 2015 report, a significant percentage of every age group it studied plays games: 26 percent of those under age eighteen, 30 percent of those aged eighteen to thirty-five, 17 percent of those aged thirty-six to forty-nine, and 27 percent of people fifty and older.

Time Spent Gaming

Many gamers spend a significant amount of time playing games, and research shows that the overall amount of time most people devote to gaming seems to be increasing every year. The American Academy of Child & Adolescent Psychiatry estimates that girls spend more than an hour playing video games every day, and boys spend more than two hours. In 2015 Nielsen research company found that gamers used about 12 percent of their leisure time playing video games, which was more than time spent on sports and wellness, music, movies, or reading. Overall, the company says that gaming time has increased by about 12 percent each year for the past few years. Video game designer Jane McGonigal estimates that by the time he or she is twenty-one years old, the average young person has accrued more than ten thousand hours of gaming. She explains just how much time this is by comparing it to the number of hours a person spends in school, finding, "That's almost exactly as much time as they spend in a classroom during all of middle school and high school if they have perfect attendance."[11]

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>
> —Lian Amaris is a communications expert.

While most people limit their gaming to a few hours a day or less, it is not uncommon to hear stories of people regularly engaging in much longer gaming sessions. For example, McGonigal

reports that a significant number of gamers actually spend as much time gaming as the average person does working. She says, "Astonishingly, 5 million gamers in the U.S are spending more than 40 hours a week playing games—the same as a full time job!"[12] Teacher Ryan van Cleave writes about his experience with *World of Warcraft*. He says that at the height of his gaming, he did little else with his free time, often eating in front of his computer and playing before and after work, and while his family was sleeping at night. In total, he says that he was playing for sixty hours a week. Van Cleave says that that there was always something to keep playing for. "There was always something better and cooler,"

> "Astonishingly, 5 million gamers in the U.S are spending more than 40 hours a week playing games—the same as a full time job!"[12]
>
> —Jane McGonigal is a video game designer.

he says. "You can never have enough in-game money, enough armour, enough support."[13] Some people go on gaming binges, where they do little more than game for days at a time. For instance, according to news reports, in 2015 a thirty-two-year-old man was found dead from heart failure in a Taiwan Internet café after a three-day gaming binge. Police spokesperson Jennifer Wu says that he was unemployed and so he was spending large amounts of time gaming in internet cafés. "His family said he would disappear for two to three days on end,"[14] she reports.

The ESRB and Game Regulation

In the United States, most of the video games available to buy or rent are rated by the Entertainment Software Rating Board (ESRB), a self-regulatory organization that was established by the ESA in 1994. Participating in the rating system is optional for video game creators, however the majority of them do so because having an ESRB rating makes it much easier to advertise and sell their games.

Games receive a letter rating depending on which age group they are appropriate for. A rating of AO means the game has mature content and is intended for those eighteen years and older. M also indicates mature content, and is intended for those seventeen years and older. A T rating means the content is appropriate for
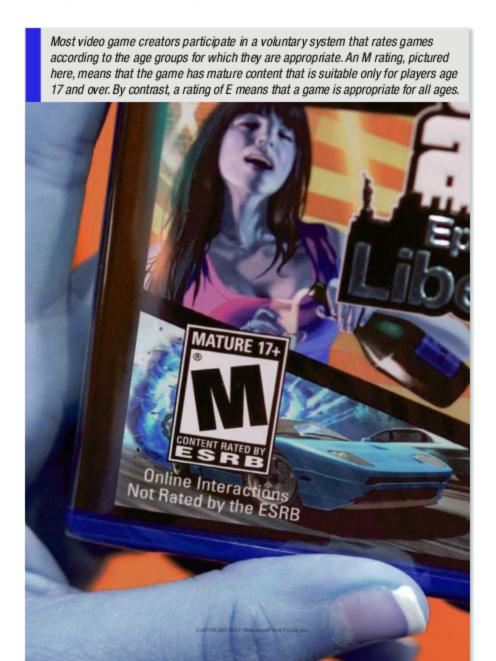
The Majority of Video Game Protagonists Are Male

While the number of female gamers in the United States is almost the same as male gamers, when females play video games, they are often forced to play as male characters. This is because in the majority of games, the main characters are male. Twelve-year-old Madeline Messer conducted an experiment that illustrates this gender difference. She downloaded the fifty most popular iPhone games in the same category as the popular game *Temple Run*. She reports: "Of the apps that did have gender-identifiable characters, 98 percent offered boy characters. What shocked me was that only 46 percent offered girl characters." Worse still, says Messer, those games that do offer girl characters often make players pay to play as a girl. Of the apps she downloaded, she says that only 15 percent offered free girl characters, while 90 percent offered boy characters. Messer also found that playing as a girl could be very expensive. She says, "I found that when an app did sell girl characters, it charged on average $7.53, which is a lot in the world of apps. After all, each of the apps I downloaded only cost an average of $0.26. In other words, girl characters cost about 29 times more than the cost of the apps themselves." In one of the games it cost $29.97 to play as a girl.

Madeline Messer, "I'm a 12-Year-Old Girl. Why Don't the Characters in My Apps Look like Me?," *Washington Post*, March 4, 2015. www.washingtonpost.com.

teens, E10+ means everyone ten years and older, EC is for children age three and older, and E means the game is appropriate for all ages. Some games contain mature content such as high levels of violence or explicit sexual themes. For example, journalist Gavin Allen describes a scene from *Grand Theft Auto V*. He says, "A user pays a prostitute for sex–which then unfolds in graphic footage–before the male character punches the woman to the ground, leaving her unconscious. It's also possible to kill the prostitute."[15] There is disagreement over how common it is for people to play these types of games, though. According to the ESRB, only a minority of games contain adult content. It reports that in 2014 only 14 percent of the games it rated received an M rating, which indicates some type of mature content. Forty-one percent were rated

E and 21 percent E10+. However, data show that while there may be a relatively small number of games with mature content, some of those games are very popular. For instance, when *Grand Theft Auto V* was released in 2013 it broke records by surpassing $1 billion dollars in sales in only three days. Overall, only a small percent of all the games rated by the ESRB in 2014 were rated M; however, these games feature prominently in sales—of the twenty top-selling video games that year, eight of them were rated M.

Most video game creators participate in a voluntary system that rates games according to the age groups for which they are appropriate. An M rating, pictured here, means that the game has mature content that is suitable only for players age 17 and over. By contrast, a rating of E means that a game is appropriate for all ages.

Many game retailers do not stock games that have not been rated by the ESRB. Just as it is voluntary for creators to label their games with these ratings, enforcement of the ratings system is also voluntary for retailers. However, the majority of retailers will not sell AO or M games to anyone who is underage. The ESRB system has both defenders and critics, and there have been numerous legal battles over whether or not it should be changed. Thus far though, attempts to increase regulation have been unsuccessful.

In addition to rating games, the ESRB also compiles statistics on the most common types of games being played. It reports that in 2014, action games were the best-selling type of video game, followed by shooter games, then sports games. Among computer games, the best-selling types were strategy games, role-playing games, and casual games (such as puzzle, word, and card games). In their 2013 report, Spil Games researchers examined game play worldwide and found that male and female game play often differs significantly. They report that girls are most likely to play cooking, dress-up, and pet-caring games, while women favor puzzle, quiz, word, matching, and mah-jongg-style games. Researchers found that boys and men often like to play racing, sports, and action types of games.

Video Game Research

A large number of studies have been conducted on the effects of video game play, particularly violent play. However, despite the existence of many studies, there is still extensive disagreement over exactly how video games affect people. It is generally agreed that video games do have some effect on people. However, a person's thoughts and actions are affected by numerous factors including his or her personality and influences from friends, school, and family. This means that it is extremely difficult to understand the effect of a game alone.

As a result, games researchers remain in strong disagreement over how research should be conducted and what the results mean. National Public Radio (NPR) science correspondent Shankar Vedantam examines the research on violent games and explains that because there is so much disagreement over how to study this

Many Games Are Very Realistic

Early video games had very simple two-dimensional graphics and re-stricted gamers to a limited number of actions, with the result that video game play was clearly make-believe. However, technological improve-ments have led to video games with extremely realistic graphics and a vast amount of freedom for players. Many gamers report that when they play these realistic games, they really feel as if they are in the game world. For example, journalist John Brandon describes the action-adven-ture game *Metal Gear Solid V: The Phantom Pain,* which was released in 2015. He says, "Its open-ended gameplay, unscripted sequences, and factors like sound and changing weather create a sense of actually being on the battlefront." For instance, in one scene, says Brandon, "You see the main character riding horseback in a sandstorm. The camera angle is perfect—you see the foreground rocks and the horse pushing against the wind. Blink twice and you might think it's a movie."

John Brandon, "How 'Metal Gear Solid V' Achieves Such a High Level of Realism," *News.com.au,* September 25, 2015. www.news.com.au.

topic, every research study is subject to multiple interpretations. He says, "The irony is that scientists who think the games are harm-ful, and those who think they're not, are both looking at the same evidence. They just see two different things."[16] As a result, while hundreds of studies have been conducted on video game effects, experts remain deeply divided on what these studies show.

Video Game Addiction

One thing that has been observed through research is that some people have trouble controlling their game play and experience problems in their lives because of how much time they spend playing. For example, Van Cleave says he became consumed by gaming and had little time for anything else. He writes about one of his low points: "My kids hate me. My wife is threatening (again) to leave me." He says, "I haven't written anything in countless months. I have no prospects for the next academic year. And I am perpetually exhausted from skipping sleep so I can play more Warcraft."[17] However, despite stories such as Van Cleave's, which

show that some people have an unhealthy attachment to gaming, there is still disagreement over whether or not it is possible to actually become addicted to playing video games.

In the United States, video game addiction is not recognized as an official medical disorder, but it has become more widely recognized as a problem in recent years. In 2013 the American Psychiatric Association (APA), released an updated version of the *Diagnostic and Statistical Manual of Mental Disorders*. This is the nationally recognized manual that clinicians and researchers use to diagnose and classify mental disorders. In the back of the updated version, the APA includes "Internet use gaming disorder" as a condition that should be researched more thoroughly in order to determine whether it should be classified as an official disorder. The APA explains this condition. It says, "The 'gamers' play compulsively, to the exclusion of other interests, and their persistent and recurrent online activity results in clinically significant impairment or distress. People with this condition endanger their academic or job functioning because of the amount of time they spend playing. They experience symptoms of withdrawal when kept from gaming."[18] Experts continue to study and debate problematic gaming behavior in order to understand why it occurs and how serious it is.

Whether they play games for hours a day or rarely play at all, a large number of Americans are impacted in some way by video games. As the authors of *Understanding Video Games: The Essential Introduction* state, games have become difficult to avoid. They state, "Video games have exploded exponentially—reproducing at an alarming rate, much like the fearful space invaders that inspired so many early games—until they are now everywhere, from tiny mobile phone displays to ostentatious wall-mounted plasma TVs."[19] Gaming has become an important part of global culture, entertainment, education, and commerce.

> "The irony is that scientists who think the games are harmful, and those who think they're not, are both looking at the same evidence. They just see two different things."[16]
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> —Shankar Vedantam is a science correspondent for National Public Radio.

The 2014 HBO documentary, *Love Child*, investigates the tragic story of a South Korean infant named Sarang, who died after her parents became so immersed in video games that they forgot to feed her. She was only three months old when she died. Rather than looking after their baby, Sarang's parents spent hours a day playing an online fantasy game called *Prius* at an Internet café. Ironically, their game play included raising a virtual child. At the couple's trial, it was argued that they had not intended to neglect their baby, but had done so because they suffered from an addiction to Internet gaming. The judge agreed, and they received reduced sentences as a result. However, the case spurred fierce debate worldwide. People wondered whether video games really could be addicting. Valerie Veatch, writer and director of the film, argues that while Sarang's death was an extreme case, the fact is that all around the world people are becoming increasingly attached to video gaming and other Internet activities. She says, "We're all kind of being sucked into or directed into this resource."[20] There is growing concern about the implications of this, with critics wondering whether video game addiction is a problem for society.

Disagreement over Whether Gaming Addiction Is a True Disorder

There is no doubt that like the South Korean couple, some people become very attached to gaming and devote large amounts of time to it. However, there is widespread disagreement over whether or not video game addiction is a true medical condition like alcoholism or drug addiction. While it is common for gamers, doctors, and researchers to talk about people feeling so compelled to game that they are addicted, at present the medical community does not officially recognize video game addiction as a medical disorder.

The lack of official recognition does not dissuade numerous medical doctors and mental health professionals from contending

that video game addiction is a very real condition and a growing problem. For example, addiction specialist and founder of the Center for Internet Addiction Kimberly Young says, "I have treated hundreds of video game addiction cases."[21] According to Young and other addiction experts, video game addiction has recognizable signs, and like drug addiction or alcoholism, it is so compelling that it is very difficult to break away from. Young explains, "Gamers who become hooked show clear signs of addiction. Like a drug, gamers who play almost every day, play for extended periods of time (over 4 hours), get restless or irritable if they can't play, and sacrifice other social activities just to game are showing signs of addiction."[22] Psychotherapist Russell Hyken gives an example of how far people will go to keep gaming. He says, "I had a client who shaved his head so he could play more and avoid taking a shower and another client who urinated in a jug so he could play."[23]

> "Like a drug, gamers who play almost every day, play for extended periods of time . . . and sacrifice other social activities just to game are showing signs of addiction."[22]
>
> —Kimberly Young is an addiction specialist and founder of the Center for Internet Addiction.

Although some people insist that compulsive gaming should be officially recognized, others are hesitant about taking such action. They caution that just because a person finds gaming compelling and spends a lot of time doing it does not make it an addiction. Instead, critics argue that in order to be considered a true addiction something needs to cause significant harm to a person's life as a result of its use. They insist that the majority of people who talk about being addicted to gaming do not actually experience any significant problems, so they are not experiencing a true medical disorder. For example, teenage boys are notorious for spending hours a day gaming, and most live their lives without significant problems.

Allen Frances, psychiatrist and professor emeritus at Duke University explains, "To be considered 'addicted,' you should be compulsively stuck doing something that is no longer fun, feels out of control, serves no useful purpose, and is certainly not worth the pain, costs, and harms. The unfavorable cost/benefit ratio should be pretty lopsided before mental disorder is considered."[24]

In some countries, Internet cafés like this one in China provide a place where gamers can play around the clock. Although some experts believe such lengthy playing times indicate a possible addiction to video games, the medical community does not recognize video game addiction as a medical disorder as it does drug or alcohol dependence.

He points out that a person can become extremely attached to something without experiencing significant harm. For example, some people are very passionate about shopping, exercising, or working and devote large amounts of time to these activities. However, in most cases, their lives are not destroyed, and they are not considered to have a medical problem. He insists, "It should not be counted as a mental disorder and be called an 'addiction' just because you really love an activity, get a lot of pleasure from it, and spend a lot of time doing it."[25]

A Transient Phase Versus a Lifelong Condition

In addition to disagreeing over whether or not true gaming addiction is possible, researchers also disagree over whether most people experience problem gaming as a short-lived phase or a lifelong problem. One group of researchers investigated trends in gaming over childhood, adolescence, and emerging adulthood and found that gaming appears to be a phase that most children

eventually grow out of. Their results are reported in a 2013 article in *Psychiatry Journal*. They found that for most people, video game play peaks in late adolescence, then begins to diminish in early adulthood. Researcher Geoffrey Ream comments, "We can think of teenagers who play a lot of video games like we think of college students who drink a lot—yeah, we're concerned, but most of them are going to calm down on their own."[26]

Others contend that problem gaming is not just a phase but something that people often struggle with for a long time. In one study, published in 2011, researchers who studied 3,034 third- through eighth-grade students in Singapore found support for this theory. They observed the children over two years and found that those children who fit the definition of pathological gamers—or gaming addicts—did not change much over that time. Pathological gamers were those children whose game play had become dysfunctional and was negatively impacting numerous facets of their lives such as school and family life. Most children who started out as pathological gamers were still that way two years later, and there were very few new cases of pathological gaming among the group during the time they were studied. If gaming really was a short-lived phase for most people, they would have expected to see more changes among the children. "Therefore," they conclude, "pathological gaming is not simply a 'phase' that most children go through."[27]

> "It should not be counted as a mental disorder and be called an 'addiction' just because you really love an activity, get a lot of pleasure from it, and spend a lot of time doing it."[25]
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> —Allen Frances is a psychiatrist and professor emeritus at Duke University.

Psychological Conditions and Addiction

Many experts believe that people with mental health problems, developmental disorders, or other psychological conditions are at greater risk than others of spending large amounts of time gaming. Hilarie Cash, the cofounder of reSTART, explains why. She says, "Conditions like Asperger's, or other painful conditions like depression, anxiety, and PTSD [post-traumatic stress disorder],

are conditions which make life and being successful in life diffi-
cult."[28] In contrast, she says, in a video game, people who usually
struggle are able to enjoy success they don't get in real life, and
so these games are often very appealing to them. She says,

> It's easier to be successful in a video game, get recognition,
> have standing within a community much more than you can
> in the real world, so if you're not having much success aca-
> demically, or if you are, you're not feeling socially successful,
> and you just don't feel like you're achieving what you want
> to achieve, you can instead turn to the world of video games
> and pretty quickly [receive] recognition, be admired and feel
> like you're making a place for yourself in the world.[29]

Michael Rich, founder of the Center on Media and Child Health,
agrees. He says, "Rarely do I see pathological video game playing
in a child who doesn't have an underlying issue."[30] For example,
he says that patients addicted to gaming often have autism, anxiety, oppositional defiant disorder, or depression.

"Rarely do I see pathological video game playing in a child who doesn't have an underlying issue."[30]

—Michael Rich is founder of the Center on Media and Child Health.

Rachel McCumber says that her autistic son, Daniel, has loved video games since he was very young, but he often has trouble pulling himself away from these games. She says, "Daniel has struggled to balance video games and life. For a long time, he could hardly get himself to stop playing when he needed to use the bathroom, let alone eat. Daniel has lied about his playing, been caught playing under the covers at 2 in the morning. He has forgone sleep to play."[31]

Other Risk Factors for Addiction

Some experts maintain that a person does not have to be suffer-
ing from a psychological condition to get drawn into excessive
gaming. Instead, they believe that any type of stress can increase
vulnerability. For example, the teenage years can be stressful for

Although in the past video games were limited to arcade or home use, today games are easily accessible on a portable device such as a tablet or smartphone (pictured). Researchers contend that this constant availability increases the risk of game addiction among vulnerable populations.

many young people, and Cash argues that this stress can cause unhealthy gaming behavior. She explains, "The mere challenge of being a teen can be enough to drive kids to escape the challenges of adolescence. Some do this with pot and other substances, but now they have a handy escape right in their back pocket."[32] Statistics do show that teenagers are more likely than other age groups to spend large amounts of time gaming.

Many researchers also believe that having a portable gaming device such as a smartphone is a risk factor for problem gaming. Jack Kuo, who treats video game addiction, explains how early video game play required a person to go to a public arcade to play. He says, "In the distant past, playing video games meant putting quarters into an arcade machine. Later, this turned into playing on home consoles, which anchor you to your house."[33] However, people are now able to play games on a wide variety of portable devices, including smartphones and tablets. This portability means that it is easy to play at any time and in any place. For certain people, this is a problem. Writer Bill Davidow argues

Video Game Addiction Should Be Officially Recognized as a Mental Disorder

Daria J. Kuss is a researcher specializing in the area of online addictions. She insists that recognizing video game addiction as an official medical disorder will greatly benefit society because it will encourage individuals to seek help, reduce the stigma associated with this problem, increase research efforts, and reduce financial barriers to treatment. Kuss argues, "Individuals who require professional care because of substantial distress, suffering, and individual impairment [due to Internet gaming] must be helped in an appropriate way. Accordingly, an official diagnosis of Internet gaming addiction is critical."

Daria J Kuss, "Internet Gaming Addiction: Current Perspectives," *Psychology Research and Behavior Management*, November 14, 2013. www.ncbi.nlm.nih.gov.

that some people need to be physically separated from things that can become addicting. He says, "In the past, society has been able to put physical barriers in place to make it more difficult to satisfy unhealthy obsessions. For example, gambling casinos were primarily segregated in Nevada." Unfortunately, says Davidow, "Things are very different today. In the first place, there is no physical barrier between people and the obsession in question. Smartphones and portable electronic devices travel with us in our pockets."[34] As a result, it has become easier than ever before for people to spend large amounts of time gaming.

Possible Harms of Gaming

Some addiction experts believe that when people spend a lot of time gaming they are likely to experience a multitude of problems. There are numerous studies showing a connection between heavy gaming and a number of negative social outcomes. For instance, in the Singapore study, researchers found that those who spent a lot of time gaming had lower grades, worse relationships with their parents, and increased depression, anxiety, and social phobia. Douglas Gentile, one of the researchers from that study, says, "We're starting to see a number of studies from different cultures— in Europe, the U.S. and Asia—and they're all showing that some-

where around 7 to 11 percent of gamers seem to be having real problems."[35] In addition, the researchers found that many of these problems became worse after youth became pathological gamers, and better if they stopped, giving further support to the theory that the disorders were caused by gaming. Addiction researcher Daria J. Kuss reviewed the research on gaming addiction and also found strong evidence that when a person becomes strongly attached to gaming, it can cause a long list of problems, including harm to relationships, aggression, poor academic achievement, and loneliness. She concludes, "This long list indicates that Internet gaming problems must be taken seriously as they can affect the individual negatively in a variety of ways."[36]

In addition to the research, firsthand stories of problem gaming are common. Many players explain that gaming takes control of their lives and causes them to neglect other things such as work, friends, and family relationships. For example, on the website On-Line Gamers Anonymous, one gamer posts about the game *Sec-*

Video Game Addiction Should Not Be Recognized as an Official Mental Disorder

Boston College research professor Peter Gray insists that video gaming is a beneficial activity and should not be classified as a problematic medical condition. He believes that calling it an addiction would unfairly stigmatize people who simply like to spend a lot of time gaming. Gray maintains,

> The teams of psychologists and psychiatrists who create the official list of psychological disorders for the Diagnostic and Statistical Manual (DSM) of the American Psychiatric Association, after careful study . . . decided not to add video game addiction, despite much pressure from practitioners who would like a new disorder to treat. I think they made the right decision.

Peter Gray, "Video Game Addiction: Does It Occur? If So, Why?," *Psychology Today*, February 2, 2012. www.psychologytoday.com.

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ond Life, stating, "I spend tons of money on it and I just CAN'T stop! I feel like I'm taking away from my kids. Every extra penny I have I spend on this game. I tried stopping but I always come back. And I start spending money again and again. I can make myself stop for a month or so, but how not to come back? I always come back."[37] Charles O'Brien, a professor of psychiatry at the University of Pennsylvania, traveled to South Korea, where video gaming is popular, and heard similar stories there. For example, he says, "We met a 17-year-old who said he felt like online games were 'pulling him' away from the real world. Others said they had contemplated suicide or played for up to 20 hours per day. The obsessions came with real consequence for these young men. Some had damaged relationships with family members; one found himself unemployed and unable to dig out of a rut."[38]

Possible Benefits of Gaming

Critics contend that stories such as these are unusual, and that for the majority of people gaming actually has benefits. For example, it is argued that rather than being socially isolating, gaming is actually a very social activity for many people and can facilitate social interaction and friendships. Research reveals that many gamers do play with others rather than alone. For instance, according to a 2015 report by the ESA, of that segment of gamers that it classifies as the most frequent gamers, 56 percent play games with others. There is evidence that this social game play is beneficial. For instance, in the ESA study more than half of the most frequent gamers feel that video games help them connect with friends. In another study, in 2015, researchers from the Pew Research Center also found evidence that games benefit people socially. They report that a third of the teens surveyed say they made new friends online while playing games. Overall, the researchers conclude, "Video games are not simply entertaining media; they also serve as a potent opportunity for socializing for teens with new friends and old."[39]

"Video games are not simply entertaining media; they also serve as a potent opportunity for socializing for teens with new friends and old."[39]

—Amanda Lenhart works for the Pew Research Center, a nonpartisan organization that conducts public opinion polling.

Two teens socialize over a video game. Despite worries about the harmful effects of video games, research has indicated that the games actually can have positive effects. Half of teens surveyed in one study, for example, felt that video games helped them connect with friends.

Games not only give people the opportunity to meet and interact with others, but they also can help players learn many important social skills, such as interacting and cooperating with other people. In a 2014 article in *American Psychologist*, researchers from Radboud University Nijmegen in the Netherlands investigated the benefits of playing video games. They explained how social games like *World of Warcraft* and *Farmville* teach social skills, stating, "In these virtual social communities, decisions need to be made on the fly about whom to trust, whom to reject, and how to most effectively lead a group."[40] In order to be successful in video games, players need to master these types of social skills. The researchers also believe that the social skills learned in these games generalize to relationships with friends and family outside the game environment.

Trying to Prevent Addiction

Overall, there is still widespread debate over whether or not it is harmful for people to spend large amounts of time gaming, and

whether or not gaming addiction is a true medical disorder. However, despite such disagreement, numerous individuals, organizations, and even governments around the world see it as enough of a problem that they have taken action to prevent addiction and treat its symptoms in those people who suffer from them. For example, in 2011 the South Korean government passed a law that prevents those under age sixteen from accessing game websites between midnight and 6 a.m. The goal of the law is to limit children's game play. In addition, both the United States and Europe have specialized treatment centers and programs for video game addiction. For instance, the reSTART Internet and Technology Addiction Recovery facility in Fall City, Washington, treats addiction to gaming, the Internet, and technology through a forty-five-day program. Patients stay at the center and participate in numerous types of therapy and life-skill classes that help them learn to control their game playing.

Gaming addiction is seen as such a serious problem in China that many parents force their children to go to boot camps for treatment. These programs use military-style discipline and medical treatments such as brain scans and medication to treat gaming addiction. Shosh Shlam and Hilla Medalia, makers of the 2014 documentary *Web Junkies*, describe the Internet Addiction Treatment Center in Daxing, a suburb of Beijing. "Parents typically take them there against their will," they state. "Once inside, the children are kept behind bars and guarded by soldiers. Treatment, which often lasts three to four months, includes medication and therapy, and sometimes includes parents. Patients undergo military-inspired physical training, and their sleep and diet are carefully regulated."[41] Treatment is so strict at these boot camps that there have been cases of children dying.

Overall, most people agree that gaming can cause problems; however, there is a lack of agreement over how severe these problems are. As O'Brien explains, the idea of video game addiction is a relatively new idea that is still not fully understood. He says, "We have to have more evidence."[42] Researchers continue to search for that evidence in order to gain a greater understanding of this important topic.

3 Do Video Games Cause Violent Behavior?

CHAPTER

Pacifique Irankunda lived through thirteen years of violent civil war in Burundi before he moved to the United States. After knowing the horrors of such violence, he says that when he first saw people playing violent shooter games for fun in the United States, he was bewildered. "I was . . . puzzled by what seemed to me like an odd sort of entertainment," he says. "How could violence so easily be turned into a game? How could companies invent such games in the first place? And how could parents buy them for their children?"[43] Yet while people such as Irankunda view violence as a serious matter, not something that should be trivialized in a game, others like Irankunda's friends report that violent games are one of their favorite forms of entertainment and see nothing wrong with them. Violent games are the most controversial type of video game and have provoked hundreds of research studies and much public debate concerning their effects. Despite all this research and discussion, experts remain deeply divided on this issue.

Violent Games and Aggression

A number of research studies indicate that violent video game play causes aggressive and violent behavior in people. Many of the studies have been conducted in laboratory settings, where researchers can control what takes place. An example of a research study is allowing some participants to play a violent game and others to play a nonviolent game, and then testing their level of aggression by allowing them to blast other people with loud noises. Researchers have also conducted a number of studies outside the laboratory, where they study the natural gaming habits of various participants, and also look for evidence of various types of violent behaviors in those participants, such as being involved in fights or criminal activity. Both laboratory and correlational studies have shown that people who play violent games are more likely to behave aggressively or violently.

Brad Bushman has researched this topic for years and is considered to be an expert on video game violence. In 2010 Bushman took part in a large metastudy, which analyzed data from more than a hundred other studies. He says that the analysis showed a clear link between violent games and aggression. He explains, "Studies show that violent video games increase aggressive thoughts, angry feelings, physiological arousal (e.g., heart rate, blood pressure), and aggressive behavior. Violent games also decrease helping behavior and feelings of empathy for others. The effects occurred for males and females of all ages, regardless of what country they lived in."[44]

> "Studies show that violent video games increase aggressive thoughts, angry feelings, physiological arousal (e.g., heart rate, blood pressure), and aggressive behavior."[44]
>
> —Brad Bushman is a well-known video game researcher.

However, critics argue that most of the existing research—such as the studies Bushman analyzed—is riddled with problems and is invalid as a result. Firstly, they insist that laboratory studies prove nothing about how game play affects people in real life because study participants often act differently when they know they are being observed. Another critique of the existing research is that while researchers might observe a correlation between violent play and violent behavior—in which people who play violent games also act violently—this is not evidence that the games actually caused that behavior. They point out that a person's behavior is influenced by many factors, not just the types of video games he or she plays. For example, people are also affected by friends and family, school or work, and other media such as music and movies. As a result, critics argue that it is impossible to determine exactly what role violent games play in the way that a person acts. "This is a pool of research that, so far, has not been very well done," says well-known games researcher Christopher J. Ferguson of existing games research. "I look at it and I can't say what it means."[45]

In a 2011 decision on regulation of violent game sales to minors, the US Supreme Court agreed that existing research does not prove that game violence is harmful. The court reviewed the

studies used to show that violent games were harmful to children and concluded, "These studies have been rejected by every court to consider them, and with good reason: They do not prove that violent video games *cause* minors to *act* aggressively."[46] As a result of this lack of proof, the court ruled that minors do not need additional protection from exposure to violent games.

Some critics have also argued that while researchers sometimes observe an increase in aggression after violent game play, this aggression is actually the result of competitive play, not violence. In a 2011 study, researchers Paul J.C. Adachi and Teena Willoughby explain that competition can actually be an important influence. Yet they find that many studies on video games and violence have failed to consider how players are affected by the competitive nature of games. To understand how competition might influence players, they compared the effects of violent games and competitive games on behavior. Adachi explains that

A fighter carries a rifle in Burundi, an African nation that has been engaged in civil war since 1993. Emigrants from Burundi and other places where war and death are a reality of daily life can have trouble comprehending the entertainment appeal of violent shooter video games.

violent content did not seem to be the major factor influencing players' behavior. Instead he says, "We found—irrespective of violent content—the two highly competitive games produced more aggressive behavior than the two less competitive games."[47] He concludes that it may be the competition in video games that influences aggression, not violent content.

Evidence That Violent Play Is Healthy

Some people believe that video games actually decrease the likelihood of violent behavior in real life because they give players a way to release frustration and aggressive feelings in a virtual world instead of the real one. Video gamer Dennis Scimeca explains how this works. He talks about playing a character called "Vault Boy" in the game *Fallout 3* and how this violent play helps him vent the anger he sometimes feels as a result of the bipolar disorder he suffers from. He says, "I spent years choking down my irrational anger at the entire world, trying to keep it together and treat people with respect. . . . *Fallout 3* gave me the opportunity to play a character who shucked all that self-control away and did whatever the hell he wanted with no concern for what anyone would think." He says, "b y indulging in his exploits I tap into and vomit up all the accumulated bile. It feels similar to my very early therapy sessions where I was sometimes offered a pillow to punch when I was ranting angrily."[48] Robert VerBruggen, deputy managing editor of *National Review*, argues that without the availability of violent video games with which to release their violent feelings, many more people would be out committing violent acts in real life. He insists, "Every minute they spend with a controller in their hands is a minute they don't spend hurting others."[49]

> "Every minute they spend with a controller in their hands is a minute they don't spend hurting others."[49]
>
> —Robert VerBruggen is deputy managing editor of *National Review*.

Defenders of video game violence also argue that violent content not only helps people release violent feelings in a harmless way, but it is actually an important part of healthy development

A fight breaks out among a group of youths. Although some researchers insist that violent video games cause violent behavior such as fighting, critics of such views point out that there is no way to single out any one factor that influences a person to act in a particular way.

for young people. Writer Michael Venables explains that the real world is full of violence and frightening things and there is no way to go through life without being exposed to these things. He says, "As twenty-first century parents, we tend to protect our children from 'issues' like fear and violence. But, when exposed to scary content, children can learn to cope with and overcome fear."[50] In the opinion of Venables and others, violent video game play is an effective way to expose young people to scary content because it allows them to face violent and scary situations in a controlled way in which there is no real threat of harm. Children can then use their new understanding to deal with the frightening and violent things they face in real life.

Some people point out that young people often seek the world of video game violence for this reason. For example, Eric Schleifer, a Connecticut psychologist who treats many teenage boys, reports that the more anxious the teens are about issues in their lives, the more interested they are in violent content. He

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Researchers Should Not Ignore the Absence of Game Violence in Some Shooting Cases

Games researcher Christopher J. Ferguson argues that people who claim to have found a link between violent games and mass shootings are only able to do so because of something called confirmation bias, which means that they ignore evidence that goes against their argument. He says, "We find a kind of societal confirmation bias in which cases that don't fit the narrative (such as Virginia Tech [mass shooting]) are simply discounted. In the case of older and/or female shooters, the issue of video game or media violence is typically ignored altogether." In contrast, he says, in the rare case where a mass shooter is actually found to have played violent games, this is used as proof of a link between violent games and shootings. Ferguson insists that using some cases and ignoring others is not good science.

Christopher J. Ferguson, "Video Game Violence and Pseudoscience: Bad Science, Fear, and Politics," *Skeptical Inquirer*, November/December 2014. www.csicop.org.

believes that this is because they use these games as a way to deal with their anxieties. He says, "If I come across a boy who is really into the violent content, that almost assures me that there's something going on, that they're struggling with something, that they have a high degree of anxiety."[51]

Distorted Views on Violence

Yet while some people believe that violent games teach young people valuable lessons, critics contend that the lessons being learned are actually harmful ones. They argue that when a player repeatedly engages in violence in a game, he or she becomes desensitized to violence in the real world and may even come to see it as a normal and harmless type of behavior. Psychologist Jay Hull explains that violent games can change people's sense of right and wrong and make it more likely for them to believe that violence is okay. "They might think 'I've done much worse things in these games,'"[52] he says. As a result, Hull argues that people

who play a lot of violent games can be less likely than others to realize that certain violent behaviors are wrong.

A 1997 shooting by sixteen-year-old Evan Ramsey illustrates the way that violent game play can distort players' understanding of violence. Ramsey took a shotgun into his Bethel, Alaska, high school and killed the principal and a student. In a later interview, he explains that as a result of playing video games, he didn't fully understand the severity of what he was doing. He insists, "I didn't realize that you shoot somebody, they die." Instead, he says, "I honestly believed that if you shoot somebody, that they would get back up."[53]

Game Violence and the Crime Rate

When trying to understand the relationship between violent games and real-world violence, some people look at the crime rate. They hypothesize that if violent games cause real-world violence, countries where people buy a lot of video games should also have high rates of violent crime. However, numerous researchers have found that this is not the case. In fact, there is evidence that high rates of video game consumption are actually correlated with lower crime rates. For instance, in the United States, video game consumption has increased steadily in recent years; the ESA reports that between 1998 and 2013 video game sales in the United States have tripled, going from $4.8 billion to $14.8 billion. At the same time, many types of crime have decreased. For example, the FBI reports that the 2013 estimated violent crime total was 12.3 percent below the 2009 level and 14.5 percent below the 2004 level. In a 2014 article in the *Journal of Communication*, Ferguson examines the effect of violent games specifically. He calculates levels of video game violence from 1996 to 2011 by using statistics about the most popular games for each year, and he compares this to youth violence rates. He reports that there is an inverse relationship between the two, meaning that at times when game violence has increased, crime has decreased.

One theory for this inverse relationship is that violent games keep people busy. In a study published in 2015 in *Psychology of Popular Media Culture*, researchers explain how this happens. They state,

> When violent games, like *Grand Theft Auto* or *Call of Duty*, are released, these aggressive individuals likely spend time playing these video games. Such a behavior effectively removes these individuals from the streets or other social venues where they might have otherwise committed a violent act. In other words, because violent individuals are playing violent video games in their homes, there may be a decrease in violent crime when popular violent video games are released.[54]

They found evidence to back up this theory. Their analysis showed decreases in homicide rates following the release of popular violent games. Sixteen-year-old Canadian Corick Henlin agrees that video games help prevent crime. He says, "Nowadays, with electronics, you can play, like, a fighting game on PS3. When you play games, you can cause trouble on that. You can cause trouble and not actually get in trouble."[55] In contrast, he says, without video games people are more likely to cause trouble outside on the streets.

Mass Shootings and Violent Games

One type of violent act that occurs on a regular basis in the United States is mass shootings. There is tremendous disagreement over the relationship between these tragic events and violent game play. Some people insist that violent games—particularly shooter games—make people more likely to carry out shootings. In support of this theory, they point to the fact that a number of mass shooters have been found to be avid players of violent games and shooter games. For example, Anders Behring Breivik shot sixty-nine people dead and wounded hundreds more in 2011 in Norway. Breivik says that he spent hours playing the violent games *Call of Duty: Modern Warfare 2* and *World of Warcraft* prior to the shooting. He says of *Modern Warfare 2*, "It is probably the best military simulator. . . . I see MW2 more as a part of my training-simulation than anything else. I've still learned to love it though and especially the multiplayer part is amazing. You can more or less completely simulate actual operations."[56] Critics insist that without the inspiration of violent games like *Modern Warfare 2*, individuals like Breivik would have been much less likely to go on shooting rampages.

Yet others point out that violent game play is a relatively common pastime and that most people who play these games never become mass shooters. Author Devin C. Griffiths says that he has played a lot of video games in his life, including first-person shooter games, and so have many other people he knows. Yet he says, "Most of us are successful and well adjusted. And as far as I know, none of us have become raging sociopaths as a result. If video

Norwegian Anders Behring Breivik, who killed scores of people during a shooting spree in 2011, arrives in court during his trial. Breivik claimed that he practiced for his attack using violent video shooter games, which critics point to as evidence that violent games can inspire violent behavior. Opponents of this idea note that many people play violent games without acting violently themselves.

games could fashion us into cold-blooded killers, you'd think that one of us would've snapped by now."[57] He points out that according to the ESA, the average household in the United States has a video game system, and that means that a large number of Americans are gamers. He says, "That's a lot of potential killers. And yet here we are."[58]

One of Many Possible Risk Factors in Violent Behavior

Many experts take a view somewhere between these two extremes: they believe that violent games alone do not cause people to become mass shooters; however, they do believe that violent game play can be a risk factor for a mass shooting. Craig A. Anderson, a psychologist at Iowa State University, explains, "None of these extreme acts, like a school shooting, occurs because of only one risk factor; there are many factors, including feeling socially isolated, being bullied, and so on."[59] He believes that violent video games are one potential risk factor among many. Former FBI senior profiler Mary Ellen O'Toole agrees that a mass shooting is likely to be the result of many different factors, but that violent games may be one of these factors. She says, "We see them as sources of fueling ideation that's already there."[60]

> "None of these extreme acts, like a school shooting, occurs because of only one risk factor [such as violent video game play]."[59]
>
> —Craig A. Anderson is a psychologist at Iowa State University.

The impact of violent games on players continues to be one of the most intensely debated topics in the field of video game research. Since the release of the first violent game, society has wondered whether violent play might be harmful and researchers have conducted hundreds of studies in an attempt to answer the question. Years later, the debate remains unresolved.

Sami Kilic works in Galveston, Texas, where he oversees doctors who are training to be surgeons. Part of that training includes the use of robotic apparatuses in the operating room to give the doctors more precision and control when performing surgery. Kilic believes that his students can become better operators of these devices by playing video games. He says that this inspiration came to him after observing his son's use of a simulator for robotic surgery. "I saw my son, an avid video game player, take the reins of a robotic surgery simulator at a medical convention," explains Kilic. "With no formal training, he was immediately at ease with the technology and the type of movements required to operate the robot."[61] After observing his son's skill, Kilic decided to investigate further. He led a study where researchers used simulators to compare the robotic surgery skills of high school students who spend a lot of time gaming with those of medical school residents. He says that the video gamers had greater skill with the simulator. James Rosser, a surgeon at Beth Israel Medical Center in New York, has also studied the effects of video games on surgery. He looked at laparoscopic surgery, where doctors manipulate long, slender instruments that are inserted into patients through very small incisions. Rosser found that the surgeons who played video games for at least three hours each week made 37 percent fewer mistakes and were 27 percent faster than those who did not play.

Robotic surgery is just one area in which video game play may be beneficial. In the past, much of the public focus on video games has centered on whether or not they are harmful, but as a result of studies such as Kilic's, there has been increasing awareness of the way in which games can also be engaging and effective tools for learning. As a result, teachers, therapists, doctors, and many others have begun to experiment with how to utilize these games to extract or enhance their possible benefits.

A Very Effective Teaching Tool

Some researchers believe that game play can be a significant teaching tool. While video games are often slighted because they are a form of entertainment, a closer examination reveals that learning is actually the basis of almost all video games. Video games expert James Paul Gee explains, "Learning is, for nearly all good games, a core game mechanic. Gamers do not just do things and make decisions. They must learn things and even master them. If they don't, they don't leave the first level of a game."[62] For example, he argues that *Grand Theft Auto* is not really an exercise in criminal behavior. Instead, he says, "It is about players coming up with good strategies for success in a virtual world with multiple constraints."[63] The unique thing about video games is that they are able to make the learning experience engaging and entertaining for the players. Players have so much fun that they don't want to stop. Gee says, "Imagine a book that constantly had quizzes and tests at the end of each section (oops, that's a textbook). Few people would consider it fun."[64] In contrast, he says, games have constant quizzes and assessments, and people not only consider them to be fun, but they pay a lot of money for this fun.

> "Learning is, for nearly all good games, a core game mechanic."[62]
>
> —James Paul Gee is an expert on video game effects.

Research on video games in education shows that when people use games to learn, there are improvements in numerous skills, including learning and remembering new information, and problem solving. For example, in a study published in 2013 in the *Journal of Educational Psychology*, researchers analyzed thirty-nine different research studies about the use of gaming in learning. In total, the studies included 5,547 participants. They found that educational video games resulted in greater learning and retention than conventional instruction methods. In another study, reported in *American Psychologist* in 2014, researchers from Radboud University Nijmegen in the Netherlands also investigated the benefits of playing video games. They found that people who play shooter games have a number of improved cognitive skills, such as being able to pay attention to important

The robotic arm visible at the center of this photo translates the hand movements of a surgeon sitting at a console into smaller, more precise movements of instruments inside the patient's body. Studies have indicated that surgeons who play video games frequently can perform this type of surgery faster and more accurately than their peers who do not.

details and filter irrelevant information. In addition to aiding cognition, the researchers believe video games help develop creativity and problem-solving skills.

Twenty-eight-year old Paxton Galvanek's story illustrates how a person can learn and remember important information through

gaming and then apply that knowledge to real-life situations. Galvanek insists that the knowledge he gained from the game *America's Army* was vital in helping him rescue victims from a car accident he witnessed in 2007. He was first on the scene after an SUV rolled over on a freeway in North Carolina, and he explains that despite having no formal medical training, he knew what to do. He says, "I remember vividly in section four of the game's medic training, during the field medic scenarios, I had to evaluate the situation and place priority on the more critically wounded." As a result, he says, "I evaluated the situation and placed priority on the driver of the car, who had missing fingers." Galvanek says that he also learned how to control bleeding in the game, so he knew to help the man apply pressure to his wound and told him to hold it above his head to lessen the flow of blood. He says, "I can honestly say that because of the training and presentations within America's Army, I was able to help and possibly save the injured men."[65]

Video Games in Schools

As a result of the belief that games can be an effective way for people to learn, an increasing number of educators are using them as a teaching tool in the classroom. For instance, in 2012 the Joan Ganz Cooney Center released a report on its survey of 505 K–8 teachers. According to the survey, 32 percent of teachers said they use educational video games in the classroom two to four days a week, and 18 percent said they use them every day. The majority reported this use of games to have a positive result. For example, more than two-thirds agreed that games increase the engagement and motivation of their students. Most also believe that games are an effective way to personalize lessons and teach a varying range of learners. Less than 10 percent said they had had a negative experience with games.

The Quest to Learn School in New York City is a public school that bases its whole curriculum on video games and other types of games. Journalist John D. Sutter explains that the learning experience at Quest resembles game play. He says, "Instead of regular classes, kids are sent on missions where they're expected to

make their own discoveries and compete against other students or classrooms from the school." Sutter says, "Kids are told they are no longer students but explorers. They're put inside a narrative that's bigger than they—they're dispatched on a 'mission' to discover. . . . Then they play games in order to make those discoveries."[66] He reports that not only do games engage and inspire students at Quest, but they also educate them effectively; he says Quest students score well compared to other schools in standardized tests.

A Tool to Improve Health

Health care professionals are also utilizing the learning power of games to help improve patients' health. A number of games have been created to help people understand and deal with various types of illnesses, including cancer and depression. For example, *Project Evo* was designed as a form of daily therapy for patients who suffer from brain disorders such as ADHD. Journalist April Dembosky describes the game. She says, "I'm driving through a frozen world, where the roads are paved in ice. As I swerve left to avoid a miniature iceberg, a red fish flashes at the top of my screen. I'm supposed to tap all the red fish that pop up, but not the green fish or the blue. And I have to do this without crashing the car."[67] Through such activity, the game helps players learn to ignore distractions and stay focused, something that people with ADHD often have trouble with. The makers of the game hope that one day it might be prescribed by doctors to treat such disorders and replace the drugs commonly prescribed now. *Re-Mission* is another game that is used to help patients deal with a health issue. This game helps young cancer patients understand what is happening inside their bodies as they undergo unpleasant cancer treatments. Another game, *SPARX*, was created by New Zealand researchers to help youth learn how to understand and cope with depression as they move through various levels of a fantasy world.

Games such as *SPARX* and *Re-Mission* have received many positive reviews. For example, in a study of 168 teens who had sought help for depression, about 44 percent of those who played *SPARX* recovered, compared to about 26 percent of those who did not. A study of *Re-Mission* found that young cancer patients

A truck and car stand in the middle of a highway after an accident. In 2007 North Carolinian Paxton Galvanek came upon such an accident and, despite having no formal medical training, was able to assist the injured victims using medical information he had obtained from playing a video game.

who played the game were more likely to take their medications regularly. Cancer patient Justin Lambert explains that cancer treatment is very difficult because it actually makes patients feel worse and not better. He says, "Other than feeling like crap all the time, you don't see the results." According to Lambert, playing *Re-Mission* helped him understand that while his treatment temporarily made him feel worse, it was actually a way for him to fight back against his cancer. He says, "[Without the game] you don't see the impact that's brought to the body fighting the cancer. (The game) puts it into perspective—something they can visualize and definitely get hope from that."[68]

Critiques of Gaming in Education

While there are very few critiques of games such as *Re-Mission*, many people are not so enthusiastic about using video games for other types of learning. Critics caution that even though some educators have found games effective, teachers and parents need to

Educational Video Games Can Make Learning Fun

Proponents of video games in education argue that one of the reasons games are such a good teaching tool is that they are so much fun. They argue that games make it much easier to teach because students are happy to spend their time learning through playing. Bill Gates, the founder of Microsoft, talks about how games can inspire young people to learn. He says, "Imagine if kids poured their time and passion into a video game that taught them math concepts while they barely noticed because it was so enjoyable."

Bill Gates, speech, Education Commission of the States Annual Conference, July 11, 2012. www.gatesfoundation.org.

be very careful about assuming that a game—even one advertised as educational—is actually a good tool for learning. Marc Prensky, author of *Teaching Digital Natives*, insists, "Games, like teachers, come in a wide variety of 'goodness.' Unfortunately, most games are not good. In fact, most are bad."[69] Lisa Guernsey is director of the Early Education Initiative at the New America Foundation, and Michael H. Levine is the executive director of the Joan Ganz Cooney Center at Sesame Workshop. They investigated educational applications, or apps, marketed to parents, and found that while these apps do have the potential to be valuable educational tools, many are not everything they promise. They state, "What we found was a digital Wild West, especially in the teeming app marketplace." For example, they looked at apps that claim to help children learn to read, and found that most were ineffective. They explain, "Most of the top-selling reading apps appear to teach only the most basic of literacy skills. They lean toward easy-to-teach tasks, such as identifying the ABCs, but don't address higher-level competencies that young children also need to become strong readers, such as

> "Games, like teachers, come in a wide variety of 'goodness.' Unfortunately, most games are not good. In fact, most are bad."[69]
>
> —Marc Prensky is author of the book *Teaching Digital Natives*.

developing vocabulary and understanding words in a narrative."[70] As a result of such findings, critics argue that while games can be beneficial to learning, teachers and parents need to be very careful about which games they use.

Critics of games also warn that when games are available, educators have a tendency to use them as a replacement for personal instruction, with harmful results. They argue that games can be an effective way to enhance students' understanding, but they are not an effective substitute for in-person instruction. Teacher Jenny Kavanaugh insists that personal instruction is critical to a full understanding of a subject. She uses the example of math, reporting that students who use math games often do not display the same level of understanding that comes from in-person instruction with her. For instance, she says that in division, students need to understand the underlying principles that explain how division works, and they do not learn these principles through gaming. She says, "I have found that my advanced students can move past division of fractions in the online game, indicating mas-

Although video games can serve as an effective learning tool, critics warn that they cannot replace the personal interaction between teacher and student. Here, a teacher assists a student with a classroom assignment.

tery, but when I ask for a verbal description of what it is they are really doing—what *is* the division of fractions, or when would you use that in the real world?—they have no idea." She argues, "I think that the rote practice is wasted time if the student does not have that conceptual understanding first. Many online games do not teach that part of math as well."[71]

Yet another critique of using video games for education is that video games are actually too engaging and entertaining, and this detracts from the overall learning experience. For example, some teachers argue that when students become used to playing video games in school, they expect a similar level of engagement and fun in regular classroom instruction, and when they do not get it, they lose interest. High school information technology instructor Gary Butcher explains, "Video games give them a rush of excitement, and before long, plain old learning can't compete."[72] In their book about video games, researchers Simon Egenfeldt-Nielsen, Jonas Heide Smith, and Susana Pajares Tosca argue that because video games seem so much like play, students can be confused about how to relate to them. They state, "Ultimately, students are unsure about whether to approach the video game as play or learning."[73] They find that this confusion can have negative effects; for example, some students are not sure whether to trust the knowledge they have gotten from the game.

> "Video games give [students] a rush of excitement, and before long, plain old learning can't compete."[72]
>
> —Gary Butcher is a high school information technology instructor.

The Potential of Games

Overall, video games continue to inspire significant disagreement over their potential to benefit society. Some people see limitless possibilities, such as game designer Jane McGonigal, who insists that not only do games help inspire and teach, but they actually have the power to change the world. She explains that this is because games inspire people to take on challenges and find solutions to puzzles. She says, "When we're in game worlds, I believe that many of us become the best version of ourselves—the most likely to help at a moment's notice, the most likely to stick with a problem as long as it takes, to get up after failure and try again." In contrast, says McGonigal, "In real life, when we face failure, when we confront obstacles, we often don't feel that way. We feel overcome, we feel overwhelmed, we feel anxious, maybe depressed, frustrated or cynical. We never have those feelings when we're

playing games, they just don't exist in games."[74] She believes that society can take advantage of the way games inspire this dedication and use gaming to solve some of the world's difficult problems, such as energy concerns or providing enough food for the rapidly increasing global population.

Yet critics remain cautious, pointing out that not all video games have been shown to benefit society. Simon Parkin, journalist and author of a book about video games, insists that some video games are clearly not beneficial. He argues that it is important to be critical of game content. He says, "If we want video games to be taken seriously, then don't pretend that they're all amazing. Because they're not. And we all know that. Loads of them are terrible." Instead, Parkin says, "Isn't it better, don't you treat the medium with more respect, if you can say, 'Some parts of these video games are incredible, and they moved me, and they taught me about the world, and they taught me about myself. And then some parts of them, I'm really unclear on whether they are any good and whether they help anyone."[75]

> "When we're in game worlds, I believe that many of us become the best version of ourselves."[74]
>
> —Jane McGonigal is a video game designer.

Video games have always had both defenders and critics; however, in the past, more of the research and debate about video games was centered on their potential harms than on their benefits. This has changed in recent years. An increasing number of people in education, technology, health care, and many other fields have begun to question that focus, recognizing that while not all games are beneficial, some do have significant potential to improve people's lives.

How Should Video Games Be Regulated?

In 2012, US representative from California Joe Baca introduced a bill to the House of Representatives that, if passed, would require almost all video games to carry a new label. The proposed label would state, "WARNING: Exposure to violent video games has been linked to aggressive behavior." Baca insists that such a warning is necessary because the ESRB—which oversees the rating system—is not doing its job properly. He argues that many video games have content such as extreme violence that can cause significant harm to young people, and that the current system of self-regulation by the video game industry does not sufficiently protect young people. "The video game industry has a responsibility to parents, families and to consumers—to inform them of the potentially damaging content that is often found in their products," he says, "They have repeatedly failed to live up to this responsibility."[76] Baca's bill failed to pass, but this was not the first attempt at changing video game regulation in the United States. Video games have always provoked controversy, and the history of video games includes repeated attempts at increased regulation aimed at keeping young people from possible harm. Thus far none of these attempts have been successful, yet society continues to fiercely debate video game regulation, and every few years there is another attempt to pass a new law or change that regulation in some way.

Violence and Sex

The main concern among advocates for increased regulation is that many young people are exposed to inappropriate violence, sexual content, and other adult themes in video games. Some games do contain very realistic and explicit violence and sex; however, these games are usually rated M, meaning that they are intended to be played by those seventeen years of age and over, or sometimes even AO, meaning "Adults Only." Despite ratings, there is evidence that much younger people commonly

play games that are rated M. For example, the Kaiser Family Foundation conducted a large survey of young people across the United States and reported on its findings in 2010. It states that more than half of all eight- to eighteen-year-olds surveyed had played an M-rated game from the *Grand Theft Auto* series. Seventy percent of boys had played one. In addition to survey results such as this, young people often relate stories about how common it is for them and their friends to play games that are rated M. In an online posting about video games one parent says, "This week, my nine year old has been teased mercilessly because I won't allow him to have any of the Grand Theft Auto games for his PS3." She says, "My son is the only one of his group of friends who doesn't have any of the games. Every one of his eight, nine and ten year old friends have at least one of them. Every one."[77]

> **"Many of the most popular games emphasize negative themes."[78]**
>
> —The American Academy of Child & Adolescent Psychiatry is an organization that works to improve the health and well-being of children and adolescents.

Many people believe this level of exposure of violence, sex, and other adult themes to young people is a problem. In a 2015 guide for families, the American Academy of Child & Adolescent Psychiatry (AACAP) warns that while some games are educational, many have the potential to negatively impact young people. It says:

Many of the most popular games emphasize negative themes and promote:

The killing of people or animals

The use and abuse of drugs and alcohol

Criminal behavior, disrespect for authority and the law

Sexual exploitation and violence toward women

Racial, sexual, and gender stereotypes

Foul language and obscene gestures[78]

The popular video game series Grand Theft Auto (pictured here in a German ad) is notorious for its themes of violence and sex. Although the game's M rating means that it is intended for players age 17 and older, 70 percent of boys between the ages of eight and eighteen reported having played it, according to one survey. Many parents and other adults worry that this exposure to such themes among young people is problematic.

Surveys show that many Americans agree. For example, in a 2013 survey of 1,050 parents conducted for Common Sense Media and the Center for American Progress, researchers found that 89 percent of parents believe that violence in video games is a problem, and 75 percent believe it is difficult

Ratings Do Not Provide Enough Detail

Under ESRB guidelines, video games are labeled with a rating and also with various content descriptors that describe potentially objectionable material such as violence. Games expert Steven J. Kirsh points out that while a game label identifies potentially problematic content, it does not specify how much of this content there is. Kirsh says, "[Research shows that] video games rated as violent may contain as little as 1% or as high as 90% violent content. Yet, under the current system, video games significantly differing in the amount of violent content would receive the same content descriptor." This means that parents who read ESRB labels may not get a good understanding of the content of a game.

Steven J. Kirsh, *Children, Adolescents, and Media Violence: A Critical Look at the Research*. Los Angeles: Sage, 2012, pp. 318–19.

to shield children from that violence. In a 2011 survey of 1,000 American adults, researchers for Rasmussen Reports found 65 percent of Americans are concerned about the level of violence in video games.

Parental Regulation

As a result of such high levels of concern, many argue that additional measures must be taken in order to stop young people from playing games that are not appropriate for them. However, there is strong disagreement about exactly how young people should be protected. Some people insist that parents should be the ones monitoring and regulating their children's video game play. For example, the AACAP advises parents to check ESRB ratings and be involved with their children's game play in order to clearly understand the content of these games. Journalist Erik Kain points out that all parents have different beliefs about what is appropriate for their children. "As parents, we need to determine which games we feel comfortable with our kids playing and which games are too mature or too violent or have explicit sex scenes two-thirds of the way through," he says. "Just like with movies, some parents will be more lax and others more strict."[79] As a result, he maintains

that parents are the ones best suited to monitoring their children's gaming.

However, the fact that large numbers of young people say they do play games with highly violent or sexual content reveals that many parents may not be monitoring their children's game play. In addition, there are signs that many parents are not well informed about the types of games their children are playing. For example, research shows that many do not check or understand game ratings. According to the ESRB's 2015 report, while 84 percent of parents are aware of the video game rating system, only 69 percent say that they regularly check the ratings on games before purchasing them. A 2013 Harris Interactive poll of 2,278 US adults found that 38 percent know nothing about the video game rating system.

> "As parents, we need to determine which games we feel comfortable with our kids playing and which games are too mature or too violent or have explicit sex scenes."[79]
>
> —Erik Kain is a journalist.

There are also numerous online posts from video store employees who complain that too many parents buy M-rated games for their children without understanding just how much sex and violence are in them. "Last week my store sold over a thousand copies of *GTA V* [Grand Theft Auto V], at least a hundred of which were sold to parents for children who could barely even see over my counter,"[80] says one employee. *Grand Theft Auto V* contains explicit sex and violence, including semi-naked women and torture scenes. "I just ask that you look at the box, ask an associate for guidance, or just be more involved," pleads the video store employee. "Lastly, when I try to describe the content and warnings of an M-rated game to you, please don't ignore me and nod while scrolling through your iPhone."[81] As a result of evidence such as this that shows a lack of parental involvement, it is argued that parental regulation of video games is not sufficient.

Government Regulation

Some people believe government regulation of video games would be more effective than the current system of industry self-regulation; however, there is disagreement over whether this is desirable, or even possible. Under the current system, the majority of retailers choose not to rent or sell games that are rated M to young people under age seventeen, but they are not required by law to do so. Critics argue that this voluntary system is not enough to protect young people and should be replaced with laws that require retailers to enforce ratings. Despite the fact that legislators have been unable to pass any laws requiring such government regulation, numerous polls do show that many people support it. For example, the 2013 Harris poll found that while 90 percent believe that parents should be the chief regulators of their children's game play, almost half also believe that there should be government regulation of violent games to ensure that access to them is limited. In the 2011 Rasmussen poll, two out of three people said that they believe state governments should be allowed to prohibit the rental or sale of violent video games to minors.

A teen examines video games for sale next to a poster explaining the game rating system. The fact that large numbers of youth report playing games with adult themes suggests that many parents do not understand the system, ignore it, or simply fail to monitor their children's game playing.

However, while there is evidence that many people support increased government regulation, US courts have consistently ruled that such regulation would be unconstitutional. According to the ESA, there have been thirteen different court rulings against increased regulation. Two rulings against government regulation of games have been made by the US Supreme Court. The most recent was in 2011, when the court struck down a California law that would have restricted the rental and sale of violent games to minors. The court insisted that even though some people might object to certain content in some video games, the government has no right to restrict that content because it is protected as free speech. In the United States, the right to express oneself without being subject to government censorship is protected by the First Amendment. That freedom of speech includes expression through art and entertainment. The court explains that video games are a form of art and entertainment and so they qualify

for First Amendment protection. It says, "Like protected books, plays, and movies, they communicate ideas through familiar literary devices and features distinctive to the medium. And 'the basic principles of freedom of speech . . . do not vary' with a new and different communication medium."[82]

Another critique of government regulation is that it would be impossible to enforce because parents or young people would find a way around it. Critics point out that most game retailers already refuse to sell or rent games to young people that are rated for adults, unless a parent is present to consent to the transaction. Yet as the stories from video game store employees reveal, many parents choose to allow their children to play these games, even though they are rated for adults. In addition, young people often have access to these games through older friends. Technology researcher Margaret Weigel argues that young people frequently find ways around many types of government regulation designed to protect them. For example, she says, "A 2011 CDC [Centers for Disease Control and Prevention] survey found that close to 4 out of 10 teens drink alcohol, and parents actively help their children circumvent . . . age restrictions on Facebook."[83] She believes that government restrictions on video games would be just as easy to get around or ignore.

ESRB Regulation

While some gamers insist that there should be no restrictions on game content, others argue that some content is so offensive that the video game industry has a responsibility to do more to protect young people from it. President of the Parents Television Council Tim Winter asks, "When you have a video game that allows a player to shoot a police officer, walk up to that police officer and urinate on him, douse him with gasoline and set him on fire, and listen to him scream as he burns to death. What kind of sticker do you put on the box to warn a parent about that?"[84] Critics like Winter insist that the current system of ESRB regulation is simply not enough to protect young people from such content.

The game industry contends that it is actually doing a good job of regulating video games. The ESRB points to the regular undercover investigations conducted by the Federal Trade Commission (FTC). In these investigations, young people attempt to purchase video games rated M, R-rated movie tickets, R-rated DVDs, or music CDs that have a parental advisory label warning of explicit content. The FTC has consistently found that video game retailers are doing a better job than those in the music and movie industries of preventing minors from buying products not intended for them. For example, in its 2012 undercover investigation, it found that only 13 percent of underage shoppers were able to buy M-rated games from retailers, compared to 47 percent who could buy music CDs with a parental advisory label. FTC commissioner Maureen K. Ohlhausen compares regulation by the video game, motion picture, and music industries and concludes, "The electronic game industry continues to have the strongest self regulatory code and enforcement of restrictions on marketing, advertising, and selling mature rated games to younger audiences."[85]

> **"The electronic game industry continues to have the strongest self regulatory code."[85]**
>
> —Maureen K. Ohlhausen is a commissioner for the Federal Trade Commission.

Protection from Game Companies

While concerns about adult content such as sex and violence are the primary reason for calls for increased regulation, they are not the only worry. Some critics also argue that young people also need to be protected from game companies that are analyzing their game play and trying to influence their behavior. Many video games are played online, through apps, or through consoles that can connect to the Internet, and this means that it is easy for game companies to monitor how people are playing. NPR journalist Steve Henn explains that these companies work very hard to influence players, analyzing and manipulating their play in order to encourage them to spend money and to keep playing the game. He says, "As we play, game developers are

Ilkka Paananen, CEO of the video game company Supercell, poses next to a rendering of a character from the company's game Clash of Clans *in 2013. Developers at Supercell and other game companies study player behavior intensely to develop tactics that influence gamers to keep playing a game, and, in some instances, spend money to purchase game elements that improve their performance.*

tracking every click, running tests and analyzing data."[86] For example, he explains one strategy called "the pinch." He says, "The idea is to make gamers uncomfortable, frustrate them, take away their powers, crush their forts—and then, at the last second, offer them a way out for a price."[87]

According to Ramin Shokrizade, the game economist for Wargaming America, analyzing and manipulating players like this is common practice. He says, "At this point, every major gaming company worldwide either has in place a fully developed business intelligence unit, or they're in the process of building one."[88] However, critics argue that while adults may be able to consent to such study when they decide to play a game, young people are not mature enough to fully understand the implications of this research and thus it is impossible for them to give their consent. As a result, they argue that it is unethical for game companies to analyze and manipulate young players.

John Davison has two sons who like to play video games, and he explains how he became aware that their behavior was being influenced by a game developer. He says that they discovered *Clash of Clans*, a mobile app game in which players run a Viking village, trying to acquire weapons and forts with which to protect their clan. The game is free to download, however, many players spend money to buy gems, which can significantly speed up their progress in attaining goals such as training troops and creating defenses. Davison says that his sons were so engrossed in the game that they were spending all their money on these in-game enhancements. He says that he realized just how good the game creator was at influencing their behavior. Despite his concern about their spending, he admits, "There was also a degree of admiration for the team at [game developer] Supercell, that they had managed to get under my 10-year-old's skin to this degree."[89]

> "At this point, every major gaming company worldwide either has in place a fully developed business intelligence unit, or they're in the process of building one."[88]
>
> —Ramin Shokrizade is a game economist for game company Wargaming America.

Despite these concerns, game companies continue to produce games with explicit content that become widely popular beyond their intended audiences. And web-based companies further their means of enticing gamers to spend more money on their in-game offerings. However, while critics continue to worry

about the vulnerability of young gamers, they have consistently failed in their attempts to make any changes to the video game regulation system. Game developers and game stores continue to be self-regulatory, leaving many to wonder if that watchdog effort is enough. Still, those who wish to see more legislation press on, while others stand strongly behind the First Amendment and the belief that parents, not government, should watch over their children's habits. Based on the long history of battles over similar regulation in the entertainment industries, this issue is likely to remain contested even as video gaming finds new platforms to entice and entertain the public.

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Center for Successful Parenting

PO Box 3794
Carmel, IN 46082
e-mail: csp@onrampamerica.net
website: www.sosparents.org

The Center for Successful Parenting believes that violent video games are harmful to the development of children. Its website contains news and research about the effects of video games.

Common Sense Media

650 Townsend, Suite 435
San Francisco, CA 94103
phone: (415) 863-0600 • fax: (415) 863-0601
website: www.commonsensemedia.org

Common Sense Media is a nonprofit organization that works to provide trustworthy information about media to youth and families. It believes families should have an informed choice about the media they consume. Its website has video game reviews and research.

Entertainment Consumers Association (ECA)

64 Danbury Rd., Suite 700
Wilton, CT 06897
phone: (203) 761-6180 • fax: (203) 761-6184
e-mail: feedback@theeca.com
website: www.theeca.com

The ECA is a nonprofit organization that represents video game players. It is opposed to the regulation of video games based on content and supports the current system of self-regulation by the game industry. Its website contains facts and position papers about video games.

Entertainment Software Association (ESA)

575 Seventh St. NW, Suite 300
Washington, DC 20004
website: www.theesa.com

The ESA is the trade association for the US computer and video game industry. Its website contains numerous research reports and facts and articles about video games.

Entertainment Software Rating Board (ESRB)

317 Madison Ave., 22nd Floor
New York, NY 10017
phone: (212) 759-0700
website: www.esrb.org

The ESRB is the nonprofit, self-regulatory body that assigns ratings for video games and apps so parents can make informed choices. Its website has information about the video game rating system and its enforcement.

International Game Developers Association (IGDA)

19 Mantua Rd.
Mount Royal, NJ 08061
phone: (856) 423-2990 • fax: (856) 423-3420
e-mail: contact@igda.org
website: www.igda.org

The IGDA is an industry association that promotes the interests of the people who create video games. It is opposed to censorship of games. Its website contains articles and reports about video games.

Media Smarts

950 Gladstone Ave., Suite 120
Ottawa, ON
Canada, K1Y 3E6
phone: 613-224-7721 • fax: 613-761-9024
e-mail: info@mediasmarts.ca
website: http://mediasmarts.ca

Media Smarts is a Canadian organization that works to educate young people so that they can develop critical-thinking skills and be informed media users. Its website contains news, research, and articles about video games.

Parent Further

615 First Ave. NE, Suite 125
Minneapolis, MN 55413
phone: (800) 888-7828
e-mail: info@parentfurther.com
website: www.parentfurther.com

Parent Further provides research and education about the impact of video games on youth and families. Its website provides reviews of video games in addition to fact sheets and articles about their effects.

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Are Video Games Harmful?

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Steven J. Kirsh, *Children, Adolescents, and Media Violence: A Critical Look at the Research*. Los Angeles: Sage, 2012.

Constance Steinkuehler, Kurt Squire, and Sasha Barab, *Games, Learning, and Society: Learning and Meaning in the Digital Age*. New York: Cambridge University Press, 2012.

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Nicholas St. Fleur, "Playing Video Games Can Help or Hurt, Depending on Whom You Ask," NPR, August 8, 2014. www.npr.org/sections/health-shots/2014/08/08/338855459/playing-video-games-can-help-or-hurt-depending-on-who-you-ask.

Elizabeth Svoboda, "The Rise of the 'Gaming for Good' Movement; New Games Are Designed to Improve Children's Sociability, Schoolwork and Overall Behavior," *Newsweek*, June 19, 2015. www.newsweek.com/rise-gaming-good-movement-340198.

Kimberly Young, "Video Games: Recreation or Addiction?," *Psychiatric Times*, April 2015. www.psychiatrictimes.com/special-reports/video-games-recreation-or-addiction.

Websites

Federal Trade Commission (www.ftc.gov). This federal agency works to inform and protect consumers. Its website contains reports and expert testimony to help consumers understand video game marketing and ratings. These include the results of its regular undercover investigations of ratings enforcement by retailers.

Kaiser Family Foundation (www.kff.org). This organization studies issues that affect the health of Americans, including video game use. Its website has numerous reports about how often young people play games, what they play, and how their gaming might affect them.

Pew Research Center (www.pewinternet.org). The Pew Research Center conducts public polls and research about numerous issues that affect Americans, including video games. Its website contains reports about the role video games play in the lives of young people.

reSTART Center for Digital Technology Sustainability (www.netaddictionrecovery.org). reSTART is a facility that helps people recover from addiction to various types of technology, including video games. Its website contains numerous articles about the effects of excessive gaming and information about how to enjoy video games without experiencing harm.

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Andrea C. Nakaya, a native of New Zealand, holds a BA in English and an MA in communications from San Diego State University. She has written and edited more than forty books on current issues. She currently lives in Encinitas, California, with her husband and their two children, Natalie and Shane.

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