

Video Games And ADHD: Harmful or Helpful ?


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Take Aways

- Recognize that technology is everywhere and not going away
- Learn to distinguish between potentially harmful vs. helpful screen time
- Understand how popular video games and neurotechnologies help kids with ADHD
- Recognize risks of screen time for kids with ADHD
- Make gaming “digitally nutritious” choose and use technology to help kids with ADHD

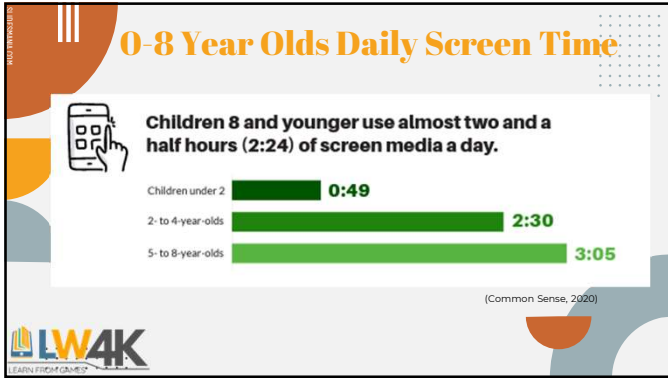


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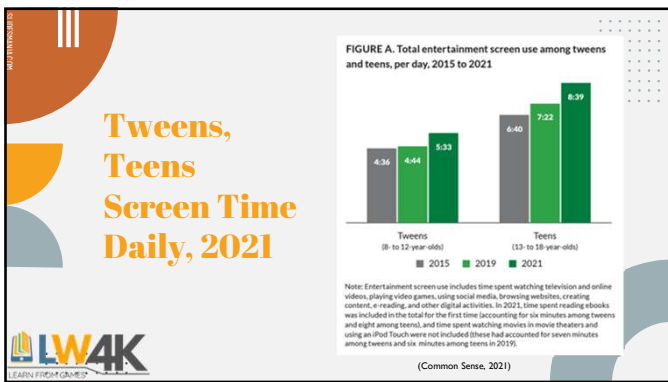
Screen Time Issues Are Not New



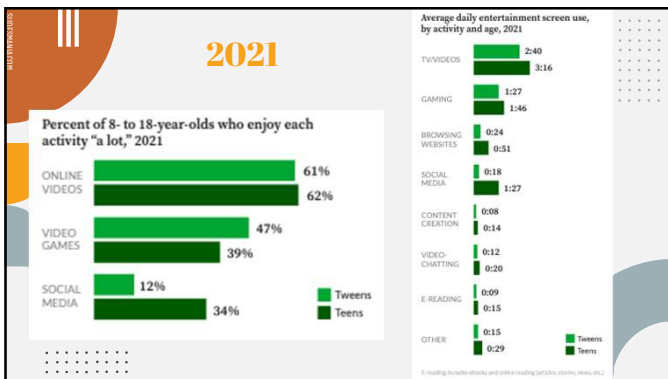
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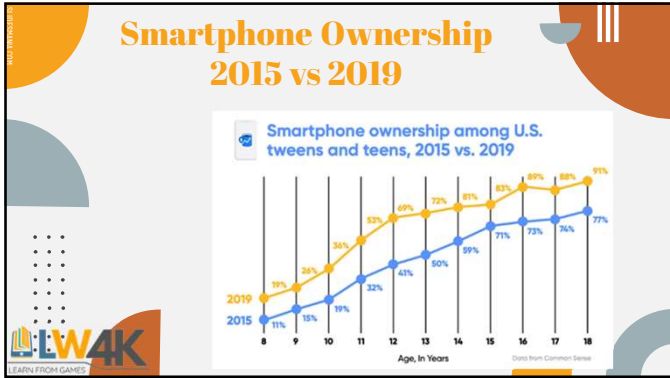
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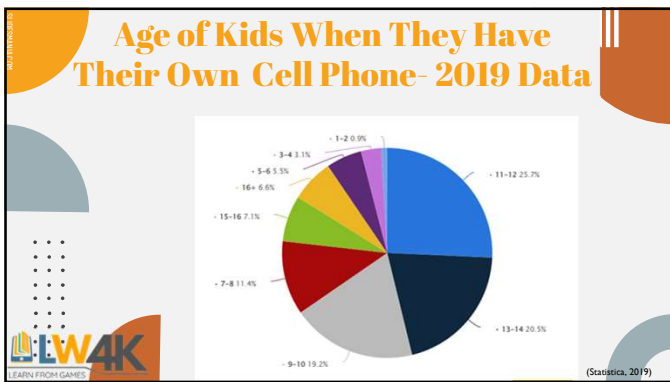
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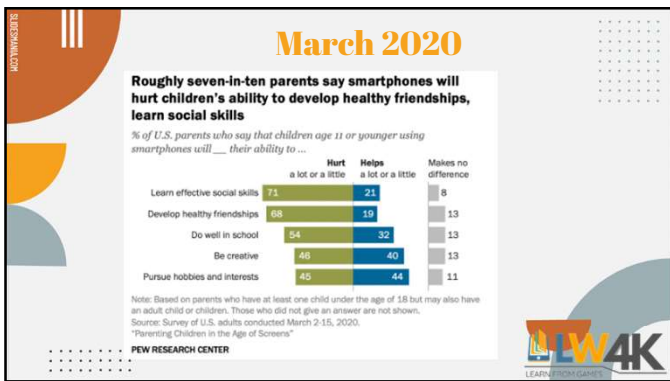
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Adults Are Just as Bad as Kids

Nielsen study, July 2018:

- Adults 11+ hours / day listening to, watching, reading, or generally interacting with media
- TV: 4 hours and 46 minutes
- Radio: 106 minutes
- App web on cell phone: 142 minutes
- App web on tablet: 47 minutes
- Internet via other devices: 65 minutes




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#DeviceFreeDinner-Attention




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Tweens, Teens Want to Spend More Time Offline

Many tweens and teens want to spend even more time socializing with friends in person now than they did before the pandemic.

Percent of 8- to 18-year-olds who want to get together with friends in-person or online "more" or "less" often than they did before the pandemic:

| Category | More often | About the same | Less often |
|-----------|------------|----------------|------------|
| In-person | 49% | 33% | 12% |
| Online | 17% | 50% | 27% |

Note: Bars don't sum to 100% due to rounding and the exclusion of those who didn't respond to the question.



(Common Sense, 2021)

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Risks and Dangers of Technology Use in (ALL) Children

- Exposure to inappropriate content.
- Replaces more valuable, productive play.
- Loss of other interests.
- Poor school performance.
- Obesity and health issues.
- Violence?
- Greater risk for kids with ADHD, ASD, Depression, Anxiety
- Addiction (Internet Gaming Disorder- DSM-V)

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"It's The Phone, Not The Kids"

- Digital media are immersive, addictive, and with mobile devices, everywhere
- Screen time takes away from other time and activities
- It is often the most attractive, engaging, alluring activity for kids
- Traditional play is more difficult in the 21st century due to busy schedules, need for play dates, overprotective parents who don't let their kids go outside unsupervised, and the ease of letting kids sit quietly in front of a screen
- The show never ends, and if it does there are endless choices, no longer three TV stations or access only to games you have in your home
- Screens are the cure for 21st century boredom - We all expect to be entertained non-stop
- As a result, many kids and adults spend far too much time focused on their screen-based devices

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Steve Jobs, Mark Zuckerberg, Bill Gates, and Jeff Bezos Are Smarter Than You and Me!!

- Keeping you on your screen makes tech companies rich
- How do they do it?
- Read Adam Adler's book, Irresistible
- Portability
- Lack of stopping cues
- Variable feedback with social media; immediate feedback with video games
- Artificial goals- creating small, but achievable goals
- Cliffhangers and uncertainty


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How Much Do Kids with ADHD Play?

Clinical and anecdotal observations - too much!!!!!!!


- Older studies- 10 to 12 year olds exactly like peers (Bioulac, 2008) impulsive/hyperactive type
- Milwaukee study of teens, same amounts with more variability (Fischer and Barkley 2006)
- More video-game play than music, in contract to peers (LearningWorks for Kids 2011)
- Hours during week (ADHD) 2.05/ Weekend 3.01 vs Community control 1.44 (Weekday) 2.36 (Weekend) Masier., al 2021



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Negative Effects of Video Games on Children with ADHD

- More than one hour a day is associated with short term increased signs of inattention (Taharoglu)
- Increased difficulty in transitioning and stopping video-game play, resulting in more oppositionalism
- More video-game time is associated with increasing signs of inattention (Mazurek and Engelhardt 2013 study)
- Video-game play can be associated with video-game addiction relate to Dopamine release in the brain (Han and colleagues 2009)
- Total time spent with screen media is positively associated with attention problems (Swing, Gentile, et al. 2010)



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Do Video Games Cause ADHD?

- Increased screen time throughout childhood associated with more ADHD at age 22 (Soares et al., 2021)
- Association of higher digital media use and subsequent symptoms of ADHD in 15/16 year olds (Ra, et al., 2018)
- ADHD and non ADHD 10 year olds similar >2 h/day playing video games. ADHD kids higher rate of compulsive video game use vs. controls 37.5% vs 11.8%, (Kietglaiwansiri and Chonchaiya, 2018)

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Video-Game Cautions for Kids with ADHD

| Cautions | Solutions |
|---|--|
| Children with ADHD or attention problems may become "hyper-focused" on video games and other digital media, neglecting other important responsibilities. | Require that your child complete all of her homework, chores, or other responsibilities before being allowed some digital play time. By making him put-off these fun activities until after her work is done, he won't be able to use digital play as a means of procrastination. |
| Kids with ADHD or attention problems often become so absorbed with activities they find interesting, that they may lose track of how much time they have spent on their digital play. | Use a timer if you need to limit your child with ADHD. Time management and having a sense of time are often significant deficits for children with attention problems. You can use online timers such as TabTimer.com or even an everyday kitchen timer to keep your child on track. |
| Kids with ADHD or attention problems may choose to engage with digital play instead of the physical activities that are part of a healthy treatment process. | Exercise has been shown to improve Focus and learning in children with attentional problems. Tell your child to go out and run around before playing video games, and to play active games such as Wii Tennis or Kinect Adventures. |

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Video Games Use Research-based Interventions Designed for ADHD?


- Point of performance interventions
- Immediacy of feedback
- Powerful and engaging feedback and meaningful consequences
- Multimodal presentations and multiple intervention agents
- Individualized to child's capacities
- Prepared parents and Teachers can apply strategic teaching principles including previewing, setting explicit goals, partnering, metacognition, and generalization strategies

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Digital Play (Video Games) as a Tool for Learning

- Kids learn from their play-it's often the best teacher
- Kids who are restricted from play have many serious psychological difficulties
- Video games, social media, watching YouTube, etc. are play, just "Digital Play"
- Digital Play is here to stay
- Daily screen time (about one hour per day) correlated with improved mental health (Andrew Przybylski, Amy Orben)

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Executive Functions, ADHD, and Video Games

- LW4K pilot research on differentiated instruction, targeting areas of EF weakness with video games
- Combination of board and video games improves fluid reasoning and processing speed (Mackey, 2011)
- Working memory video games improve WM, fluid reasoning skills (Cogmed) Intensity/duration
- Computer-based training improves executive attention in preschoolers (Rueda, 2005)
- Video game-like math and reading programs improve learning, reduces attention symptoms (Stoner and DuPaul Studies)
- Games (non-video) increase cognitive load - teaching tool by parents reduces ADHD signs in preschoolers (Halperin, 2012)
- Study on games to improve working memory (Davis, 2011)

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Why Use Video Games and Digital Media to Help Kids with ADHD?

| Kids with ADHD or Attention Difficulties | Video Games and Digital Media |
|---|---|
| May become easily bored and unable to sustain attention | Good video games and digital media are often multi modal, requiring ever-changing skills and employing video, sounds, words, and actions that help keep kids interested and engaged |
| Often require immediate reinforcement or consequences to stay focused on a task | Video games provide clear and immediate feedback, constantly letting the player know what he is doing wrong, and what he is doing right |
| Often require that their body or mind to be actively engaged | Video games and digital media are extremely engaging and many require physical and cognitive involvement |

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Why Use Video Games and Digital Media to Help Kids with ADHD?

| Kids with ADHD or Attention Difficulties | Video Games and Digital Media |
|---|--|
| Usually have problems with following directions | Video games teach by trial and error or through guided discovery, requiring that the player understand the instructions in order to succeed |
| May struggle to learn new information and experience frustration or low self-esteem as a result | Most negative feedback from video games and other digital media occurs privately. This causes less embarrassment and frustration, while teaching the player how to handle these emotions |

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Popular Video Games That Are Good for Kids with ADHD

- Practice planning and organization
- Require flexibility
- Performance involves sustaining attention
- Require capacity to ignore distractions
- Social and use communication skills
- Tap into time management skills
- Foster creativity
- Use self control and metacognition skills

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Pokemon



Flexibility in Pokemon Scarlet & Violet!



Flexibility in Pokemon Legends: Arceus



Pokemon Legends Arceus Mini Course Challenge: Catching an Alpha Pokemon

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Minecraft



Time Management in Minecraft



Planning in Minecraft Survival Mode



Planning in Minecraft Series: Building a Bridge!


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Roblox



Framed!
Spy-movie action!

Roblox: Framed!
Practicing Working
Memory




Practicing Flexibility
With Roblox! Cops
and Robbers



Planning in Roblox's
Coconut Tycoon


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Animal Crossing



Flexibility in Animal
Crossing!

Focus on Fishing With
Animal Crossing: New
Horizons



Planning a Marketplace in
Animal Crossing: New
Horizons

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**Video Games/Digital Therapeutics,
Digital Medicine, Neurotechnologies,
and Apps for ADHD?**

Digital Therapeutics- medical interventions using evidence-based, prescriptive, clinically evaluated software—often seek government approval (FDA in US)

Digital Medicine- the use of technologies as tools for measurement, and intervention that support the practice of medicine broadly.

Digital health refers to the use of information and communications technologies (Apps, brain training) to manage illnesses and to promote wellness.

Apps and Games- Consumer directed, popular games and apps used as tools to help with learning, skill development, problem solving, and personal growth.

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Characteristics of Video-Game-Based Digital Therapeutics, Neurotechnologies

- Evidenced-based approaches and research
- Directly targets specific brain functions, skills, self regulatory capacities, behaviors
- Built in algorithms, adaptable,
- A tool in the toolbox, adjunctive, used in combination with other interventions

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EndeavorRX

- What is it? Endeavor Rx is an engaging video game in which players chase mystic creatures, race through different worlds, and problem-solve. Akili Interactive describes it as “the only doctor prescribed videogame treatment for kids with ADHD” that has received FDA authorization
- Age Range: 8-12
- Target diagnoses or symptoms: ADHD Inattentive and ADHD Combined-Type. Selective and sustained attention.
- Cost: Insurance may pay for some patients. There is a \$99.00 maximum per month for a 3 month subscription
- Length of use: 25 minutes per day, 5 days per week for 4 or 8 weeks.

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EndeavorRX

- How does EndeavorRx work? A proprietary platform, called the Selective Stimulus Management System, engages specific cognitive networks with interactive game experiences to strengthen attentional control.
- EndeavorRx is prescribed by a physician and then downloaded onto a mobile device.
- It is fast-moving, graphically complex, presents increasingly difficult challenges, adapting to the players skill, and is not easy to beat.
- Players need to avoid distractions, multitask, and avoid obstacles in order to succeed in game play.



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EndeavorRX




And proven in clinical studies

W4K

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Mightier

- What is it? 25+ games using a heart sensor to regulate game play and emotions.
- Age Range: 8-12
- Target diagnoses or symptoms: Frustration, anger, oppositional behavior, anxiety, emotional regulation, inattentiveness, and hyperactivity.
- What is Mightier? A video game-based program, with more than 30 engaging games designed to help kids build emotional regulation skills.
- Cost: Monthly Subscription \$40, Annual \$336
- Length of use: Ongoing, suggested use 3 times per week, 15 minutes per day



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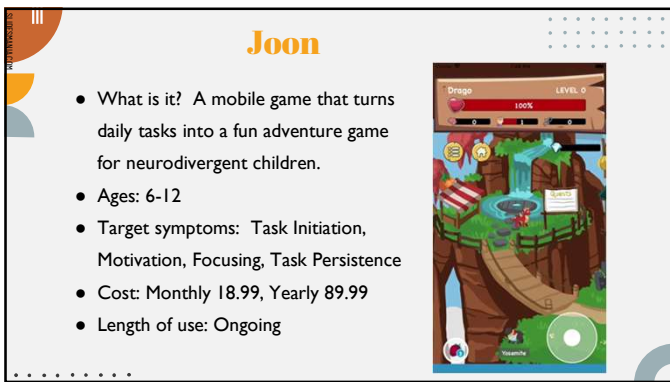
Mightier

- How does Mightier work? Direct instruction in breathing and relaxation techniques and sustained practice of these skills via their heart rate monitor that controls game play.
- Kids wear a wireless heart rate monitor on their arm while playing Mightier games
- A graphic within the game shows them their heart rate
- Players observe that if their heart rate rises due to excitement or anxiety, the games become harder.
- Using various calming skills taught within the gameplay they learn how to bring their heart rate down. These same skills can then be applied in real-world situations of frustration, anger, or loss of control.

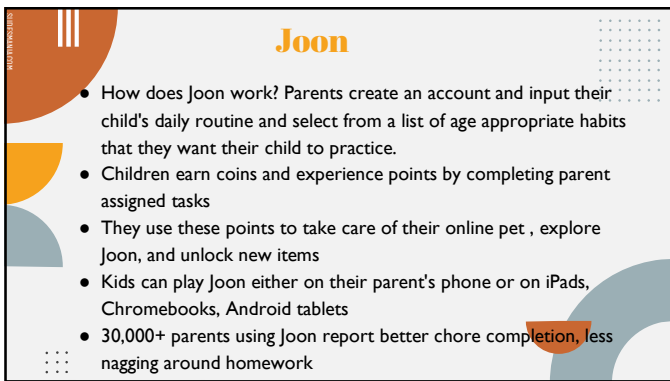
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LearningWork for Kids (LW4K.com)

- **What is it?** LW4K.com is an educational platform using live and self-guided online classes that leverages popular video games as a teaching tool. LW4K.com uses games such as Minecraft, Roblox, and Pokemon to identify, practice, and apply executive functioning and social-emotional learning (SEL) skills.
- **Age Range:** 6-13
- **Target diagnoses or symptoms:** Executive function and social-emotional learning (SEL) skills
- **Cost:** \$5.00 per class or Monthly subscriptions \$19.00
- **Length of treatment:** Ongoing



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LW4K.com

- How does LW4K.com work? LW4K identifies popular games that require players to use executive functioning skills such as time management, organization, planning, task initiation, and flexibility in their gameplay.
- They offer both live, instructor-led and self-guided classes.
- Classes help children identify, think about, and apply executive functions by teaching them the soft skills that improve their game play and real world abilities to solve problems.
- Currently, there are 50 self-guided classes.
- Videos and game-based projects are used to instruct students in the LW4K model of "Detect, Reflect, and Connect" that serve to transfer game-based executive functions to real-world activities.

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LW4K.com

DETECT
REFLECT
CONNECT

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10 Levels for Screen Time Management

- Accept and Embrace Screens
- Model
- Start young
- Talk, teach, take part in screen time
- Recognize the enemy- How tech is designed to keep you glued (Alter)
- Play Diet
- Schedules, curation of content, limits for kids and adults
- Own and Control the technologies
- Screen Time Parental controls- (Need to have great instructions for how to use these)
- Family therapy with an expert/Treat it as an "addiction"

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Play Diet

- Social Play, Active Play, Creative Play, and Free Play.
- Digital Play is just one part of a balanced Play Diet.
- Neglecting digital play is just as bad as allowing too much digital play.
- Digital Play can be active, social, creative, and free.

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Tips to Get Kids to Choose a Healthy Play Diet


- Create the expectation that in your family, we do more than spend our time on screens
- Provide high levels of support for alternative types of play- money, transportation, accepting play you don't love (eg dangerous activities, extreme sports, going to concerts)
- Be the house and parents who support these other activities
- Use your child's digital play as an opportunity to engage in other forms of play- Madden=Football, Minecraft=Rock Hunting/Geology
- Exercise together, join a gym, find an extreme sport that captures your child's interests
- Make gaming about getting a job in the industry-Esports jobs
- Encourage your child's cynicism and distrust of adults-get them to realize they are being manipulated to stay on their screens



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General Guidelines: When a Play Diet Doesn't Work

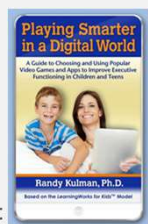
- Mean what you say. Be consistent, and follow through.
- Make rules that you can enforce and that make sense for your family.
- Don't punish yourself
- Have different limits on weekends and holidays.
- Recognize the need for rigid and clear limits for the child obsessed with screens.
- Choose strategies that fit your kids and family. For example, "Homework is done first"
- Exercise and being outdoors comes first, then screen time
- Stop gameplay an hour before bedtime.
- Make sure consoles and computers are in public areas.
- Be in charge of internet access by owning the router.
- Get apps and technical help setting limits.



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Playing Smarter In A Digital World:

A Guide To Choosing And Using Video Games And Apps To Improve Executive Functioning In Children And Teens



"The book's clearly articulated strategies help parents use digital media in a more effective manner and, at the same time, set effective limits and implement a healthy "play diet" for their children. A section devoted to exploring specific strategies for using digital media with children in specific populations—such as children affected by ADHD, autism spectrum and learning disorders, and other mental health and educational issues—is also featured, as is a list of specific games, apps, and tools to make game-based learning most effective."

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The Gaming Overload Workbook:
A Teen's Guide To Balancing Screen Time, Video Games, And Real Life

“The book’s clearly articulated strategies help parents use digital media in a more effective manner and, at the same time, set effective limits and implement a healthy “play diet” for their children. A section devoted to exploring specific strategies for using digital media with children in specific populations—such as children affected by ADHD, autism spectrum and learning disorders, and other mental health and educational issues—is also featured, as is a list of specific games, apps, and tools to make game-based learning most effective.”

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Train Your Brain For Success:
A Teenager's Guide To Executive Functions

“Executive functions are a set of thinking, problem-solving, and self-control skills that tell the brain what to do, and this book demonstrates the ways kids use executive functions in school, at home, and in their other activities and shows how these skills can be improved through sustained effort. Beginning with a test to determine executive-functioning strengths and weaknesses, the book then explores in detail eight distinct sets of skills, including planning, organization, focus, time management, self-control, flexibility, memory, and self-awareness.”

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Free Gift from lw4k.com

- For a free membership to lw4k.com, click the link here: [LW4K Membership](#)
- At checkout, use the coupon code: **CHADMIDWEST**
- This coupon is good for a three month subscription, giving free access to all the classes on the website!
- It will ask for a credit card, but it will not be charged for those first three months.

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Thank You!

LW4K
LEARN FROM GAMES

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- Screen Play Psychology Today Blog
- <https://www.youtube.com/c/LW4KLetsPlay>
