Playing Smarter in a Digital World: A Guide to Choosing and Using Popular Video Games and Apps to Improve Executive Functioning in Children and Teens


Child psychologist Randy Kulman, PhD, has worked with challenging youth for more than 25 years. Author of Train Your Brain for Success: A Teenager’s Guide to Executive Functioning (2012), Kulman designed a Web site called LearningWorks for Kids (2013). A companion text to the Web site published this year, Playing Smarter in a Digital World, offers practical, sympathetic advice for parents and other caregivers that addresses concerns about selecting appropriate games, limiting screen time, and participating in children’s gaming lives. As Kulman recognizes in this helpful paperback, many parents are concerned about the amount of time their children spend online or using apps, and yet parents provide their children with the latest tablet or game because they feel these may offer educational and social advantages. At the same time, parents are also worried that games and other online activities may actually do more cognitive harm than good, but, lacking clear guidance about how to select games and apps, they feel helpless to advise their children. Kulman’s thoughtful guide not only gives parents the information they need to promote digital responsibility, he also explores the positive role games and apps can play in improving children’s cognitive skills. His key argument starts from the premise that digital games can teach 21st century skills that children need to master for success.

Kulman featured his new book at the 10th Annual Games for Health Conference (convened by Ben Sawyer and Beth Bryant of Digital Mill in Boston, MA, June 2014). The author focuses on a pragmatic approach to what he calls the “play diet,” a concept delineated in several chapters of Playing Smarter in a Digital World. Not unlike the U.S. Department of Agriculture’s “Choose My Plate,” the “play diet” seeks to balance competing needs: Social play, active play, creative play, free play, and digital play. Ideally, a balanced “play diet” would include outdoor classic games such as Capture the Flag and traditional family-focused board games, but, Kulman avers, we should also understand that “SuperMario” and “The Legend of Zelda” are part of the current digital landscape, and we should include them in the “play diet” within reasonable limits.

Kulman directly confronts this thorny issue of setting limits. Based on his study of 500 families’ attitudes toward digital media use as well as his related field studies, Kulman addresses the many ways in which parents set limits on technology and screen time. He outlines the range of options from “never” to “1 hour a day” to the lenient “no limits” and explains how parents can effectively guide their children in maintaining balance in their “play diet.” A realist, he also has suggestions such as keeping the router in the parents’ bedroom in case the Internet connection just needs to go to sleep at 9 p.m. in order to enforce limits for a child who cannot set his or her own.

Kulman’s advocacy for gaming as a healthy part of children’s play is predicated on his findings regarding the relationship between specific games and the development of specific executive function skills. The first third of this 19-chapter book discusses in general what his research shows games can do to help children learn. It is in this section that he introduces his term the “Learning Quotient” (LQ), which is a score given to a game that represents the sum of a “Brain Score” and a “Fun Score”; the LQ is intended to help parents and educators assess a particular game’s or app’s appropriateness for a specific child. To make this information more accessible, he has created a table, included in the reference section, using the LQ, that scores a variety of games and apps and catalogues the skills targeted in each game such as planning, working memory, flexibility, and self-awareness. The book then refers back to the Web site, where the reader can find more about the LQ.

The second third of the book articulates how games can improve specific developing brain functions; the final section...
includes topics of special concern such as games and attention deficit hyperactivity disorder (ADHD), autism spectrum disorders, and learning disorders. Although not exhaustive, it is a useful starting point for caregivers, and it disavows claims that all digital games dull the mind and encourage only sociopathic behaviors.

The book includes several illuminating case studies to help explore how games and apps promote cognitive development. For example, recognizing parents' worries about their children's obsession with "Minecraft," he describes an 11-year-old named Jacob whose ability to be flexible and to persist in the face of challenges confronted in the game improved over time. Kulman uses these case studies to underscore the need for parents to resist being dismissive of gaming as educational and to stop thinking of all games as isolating and antisocial. He makes the point several times in the book that social play and problem-solving, especially informally (for example, as kids compare notes on the school bus about how to beat the game), leads to nuanced social engagement and useful life skills.

Kulman sees YouTube, the ubiquitous Internet "channel" that allows anyone to post videos, as a vehicle for children to learn to be process thinkers and to hone their public presentation skills. Thousands of videos are now online of young men and women, some very young, explaining how to learn or master a specific skill in a gaming environment. To be an effective YouTuber in this way, the child must plan carefully, think critically, deliver information in a logical sequence, and engage with a demanding—and increasingly international—audience (in the preface, Kulman recounts his bus about how to beat the game), leads to nuanced social engagement and useful life skills.

As a Kaiser Family Foundation study recently noted, of the large number of hours of screen time consumed by youngsters, only a third of parents are engaged in videogame play with their children. Kulman encourages parents to use his step-by-step technique as condensed into the mnemonic "Detect, reflect, connect": "Detect" what your child is actually doing online or in an app; consider a nonjudgmental comment you could make to your child about the activity you detect ("reflect"); "connect" with your child by sharing your understanding of the skills he or she may be gaining by playing the game. He also discusses how to make that skill "generalize" or spread into the real world.

One of Kulman's many case studies calls attention to the risks of unsupervised game play. He describes a 6-year-old whiling away his days playing "Call of Duty," the first-person-shooter game, without any oversight of or engagement with his parents. Protecting children from the many possible pitfalls of online gaming is a critical element in parenting in the digital age. Troubled youth who tend toward impulsivity are especially vulnerable as they use social media and multiplayer games online. Kulman rightly points out that there are certainly real risks to exclusive or unsupervised digital play for all children.

The author embraces our children's digital world, pointing out nuances we may miss by walking by the screen, and connects the particular skills learned in the gameplay to executive functions and then to future job skills. The author successfully translates some of the features in games into understandable cognitive terms. He is strongest when describing youth like Cameron, a 10-year-old with ADHD, in Chapter 17, who can ace the game "Madden 25," seemingly cured from all attentional problems during gameplay. He points out the common misperceptions about the 5–11 percent of youth diagnosed with this condition, and he is compassionate describing their common comorbidities. This section has a great table about games for ADHD and suggestions about playing "Wii Tennis." He goes on to make the suggestion to actually go outside and play real tennis with children, positing that as parents we must discuss workout habits with children. This is refreshing in a game about digital media. Kulman reminds us several times in this book that we are critical for role modeling about the "play diets" for our children.

However, this highlights one of the shortfalls of this book: It is thin on peer-reviewed references and citations. Kulman's comments about the link between videogames and violent behavior, for example, are unsubstantiated, although meta-analytic studies support this link. Additionally, the reference list is incomplete: For example, the Robert Wood Johnson Foundation funded the development of the www.healthgamesresearch.org Web sites that host a database of games that support executive skills and/or other learning; mention of these sites is missing from the "Internet Resources for Game-Based Learning" list at the back of the book. Oddly, Kulman does not include "Dance Dance Revolution" or "JustDance" in the index or in the reference LQ table, but he does suggest that exergames could have potential for learning.

A somewhat curious aspect of the book is the lack of clarity about the connection between Kulman's research and the LQ concept. The LQ is a very useful idea. As mentioned earlier, this scoring weighs the child engagement "Fun Score," which measures interactive quality, presentation quality, and depth, with the cognitive impacts, also called the "Brain Grade," based on the executive-functioning skills, learning curve, and academic skills in the game. This results in a single score between 7 and 10. The polling and methods used to develop the LQ are not articulated or cited in the book, but there are certainly many hours of labor behind those metrics. An oversight from the perspective of the medical professional, this will likely not matter to the reader for whom this book seems targeted—parents and teachers.

The index could be easier to use; the listed topics are not clearly integrated into the reference table. For example, a reader might be interested in a certain app's or game's LQ but then may not be able to find that game in the reference table at the end of the volume. The book could be improved with the addition of visuals such as screenshots, which could enhance readers' understanding of Kulman's gaming examples. In an approach that is a plus as well as a minus, Kulman is not afraid to invoke specific games or apps by name even though by so doing the book will quickly seem outdated in a few sales cycles. (He does, however, remind the reader frequently to check his Web site for updates.) He does applaud parents who play with their children. He promotes exergames as a way to boost physical activity, but there is no suggestion that parents play exergames with youth, and both generations would certainly benefit from that.

Everyone knows that play is learning, and in Playing Smarter in a Digital World Kulman makes a strong case for parents to update their definition of learning to include gaming and other computer-based activities. His down-to-
earth suggestions about how to think about executive functioning are clear and useful for the lay reader. Medical professionals may find his presentation a bit informal, but it is hard to argue with his thesis no matter who the reader might be. Any caregiver who has struggled with finding ways to understand the immersive qualities of games can take heart that children are indeed learning in this digital medium. Who knows, kids can even help us parents out by playing games with us that may improve our memories by engaging us on mission games, or help us become more cognitively flexible by playing strategy games.

In sum, Playing Smarter in a Digital World would be a great gift to an educator or parent of a school-aged child. The work adds to our understanding about the games and apps that we can download today. Certainly, we cannot all afford to buy all games out there, but we can take some of the advice from Dr. Kulman’s test drive or invest in some of the best out there.

Acknowledgments

Editorial assistance provided by Sarah E. Shmitt is appreciated.

References


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