Addressing Addictions to Technology

Live Webinars Supporting
5-Actions Programs™

9/17/22

John Fitzgerald, PhD, LPC, CAS
Adjunct Faculty, Systems Science Graduate Program, PSU
Principal, Digital Therapeutics Group, LLC

Agenda:

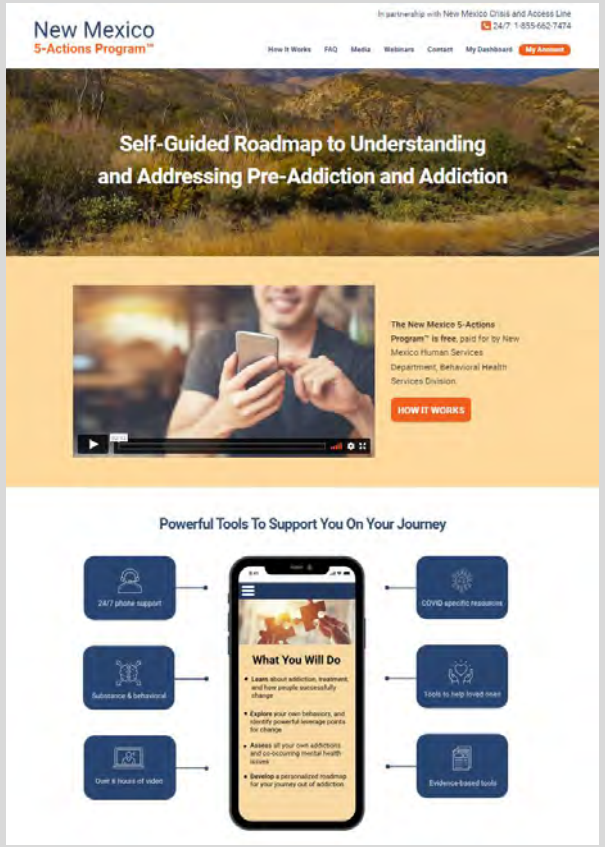
- Discuss the ways technology is impacting our life today
- Review how technology rewire our brains with little conscious awareness
- Talk about risks of not being proactive in our relationship with technology
- Discuss why addressing technology addiction is not so different from other addictions

Celebrating National Recovery Month!

5-Actions Programs™

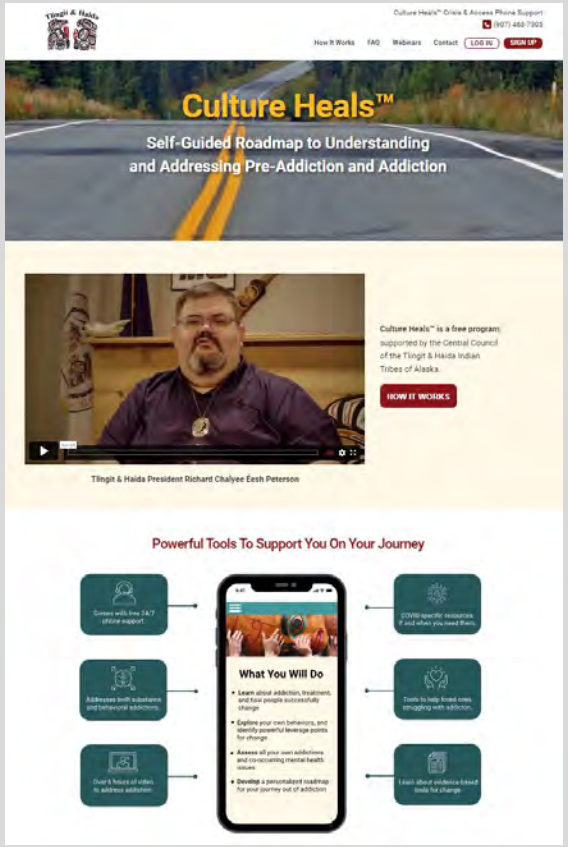
- **Self-guided roadmap** to understanding and addressing addiction (substance and behavioral)
- **Launched November 2020** in New Mexico, 2022 in Alaska
- **Mobile-friendly online platform,** free for all who sign up to use the program
- **Over 125+ videos**, screening tools, and links to resources
- **24/7 phone support** from trained clinicians

New Mexico



www.nm5actions.com

Alaska



www.cultureheals.com

5-Actions Program™ Webinars: 2022

- **Monthly webinars** to address timely topics that are linked to the 5-Actions Program
- **One-hour format** in which we do our best to optimize your time
- **Guest experts** from the community with lived experience and working as professionals
- **Community discussion** where you can ask questions and connect with speakers

https://**5actionswebinars**.com/

October 22: 8am (Alaska), 9am (PST), 10am (MST)

From Rat Park to the Adaptive Paradigm of Addiction: Insights from Dr. Bruce Alexander

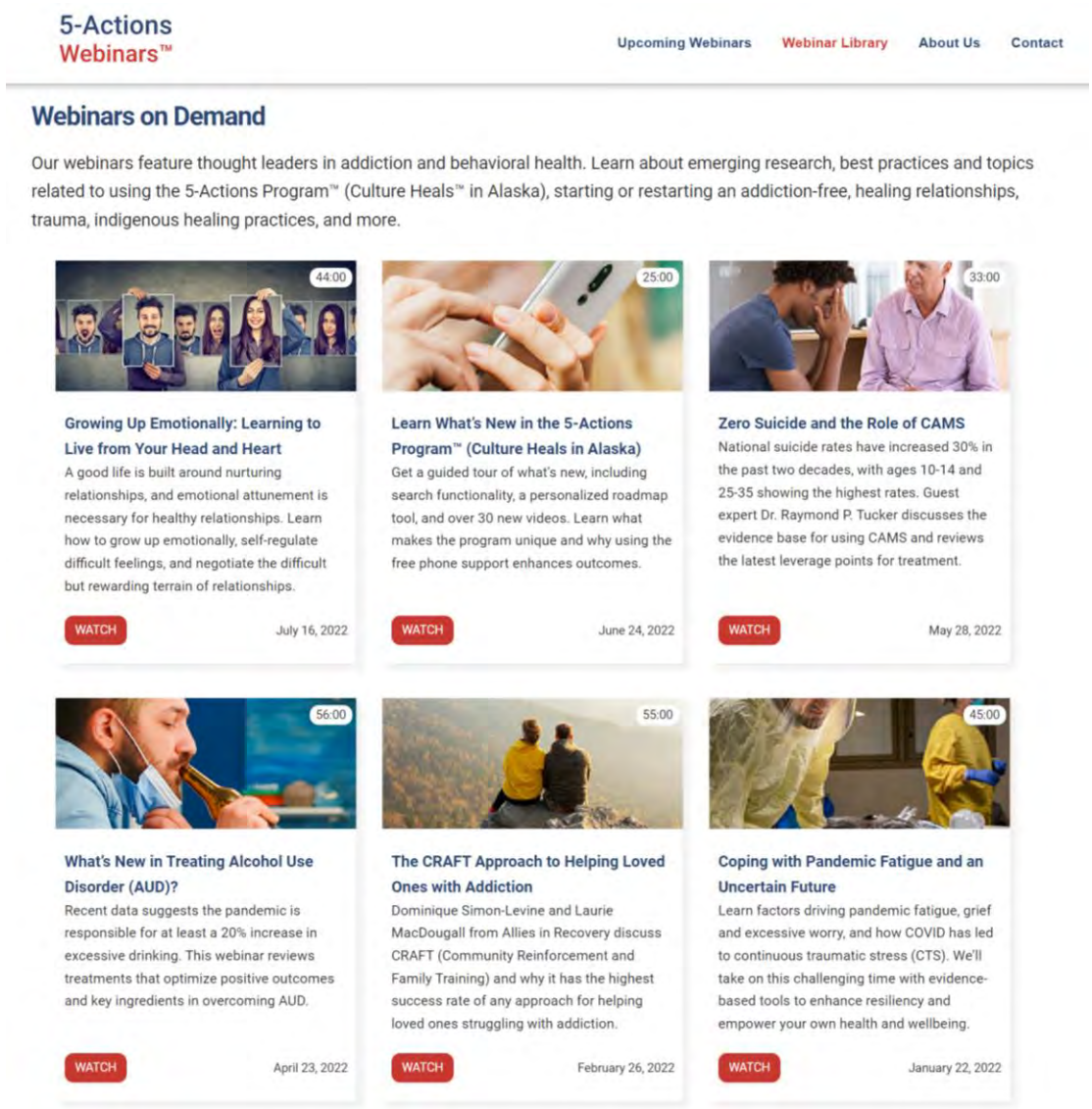
November: 8am (Alaska), 9am (PST), 10am (MST)

Five Things to Know Before You Get Sober with Nico Morales

December: 8am (Alaska), 9am (PST), 10am (MST)

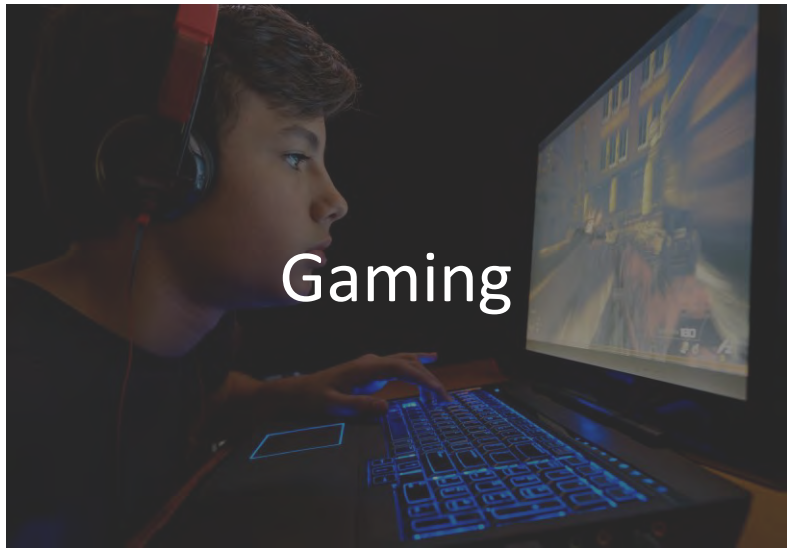
Addressing Burnout at Work, Home, and in Life: Update on Pandemic Fatigue

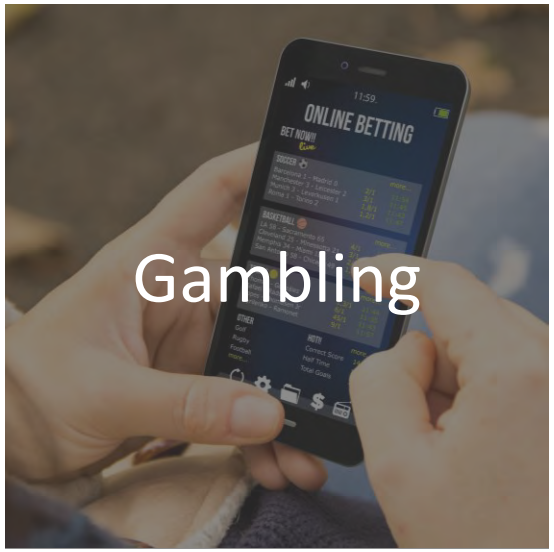
Redesigned Webinar Library!

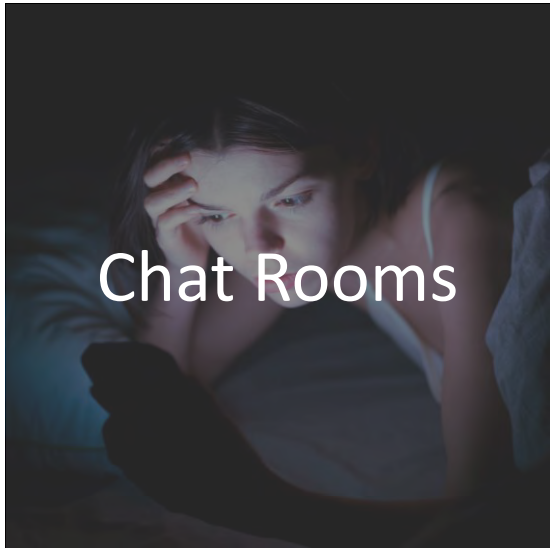


- Each presentation now has a dedicated page where resources, external links and transcripts (when available) will be listed
- Videos can be used for personal education, in the classroom, or as homework for clients in treatment
- Will add search functionality as library grows

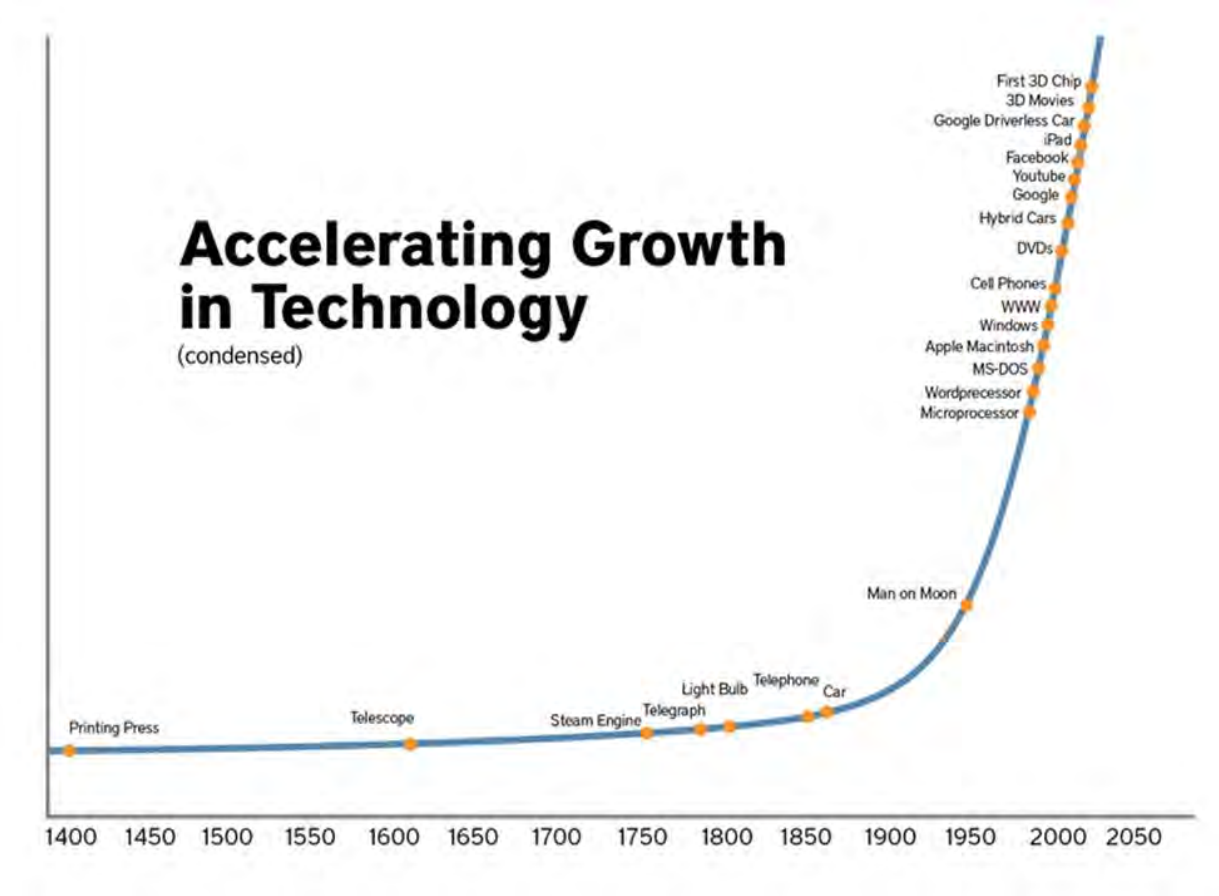
Addictions to Technology







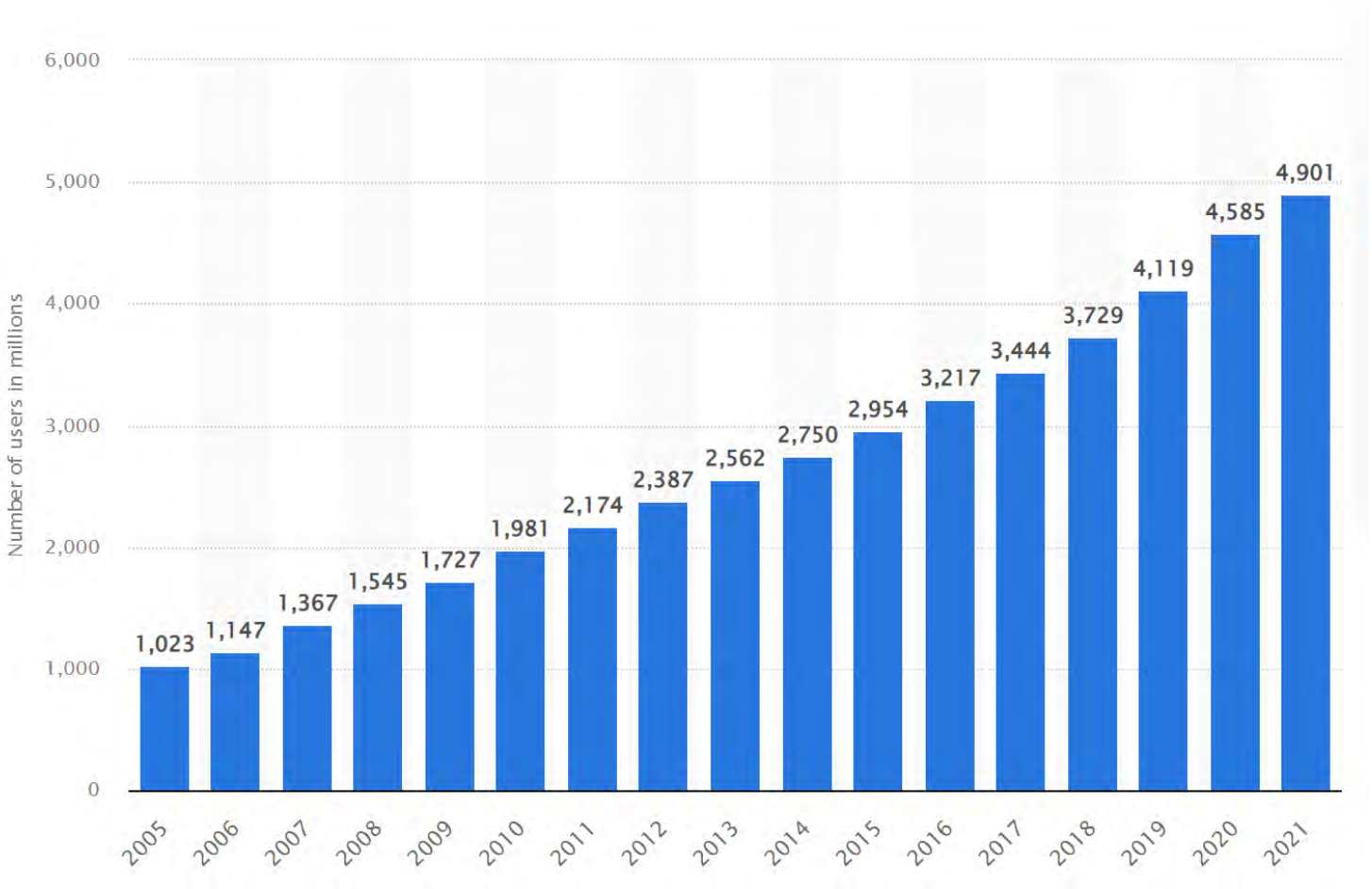
Astonishing Fast Technological Innovation



1983

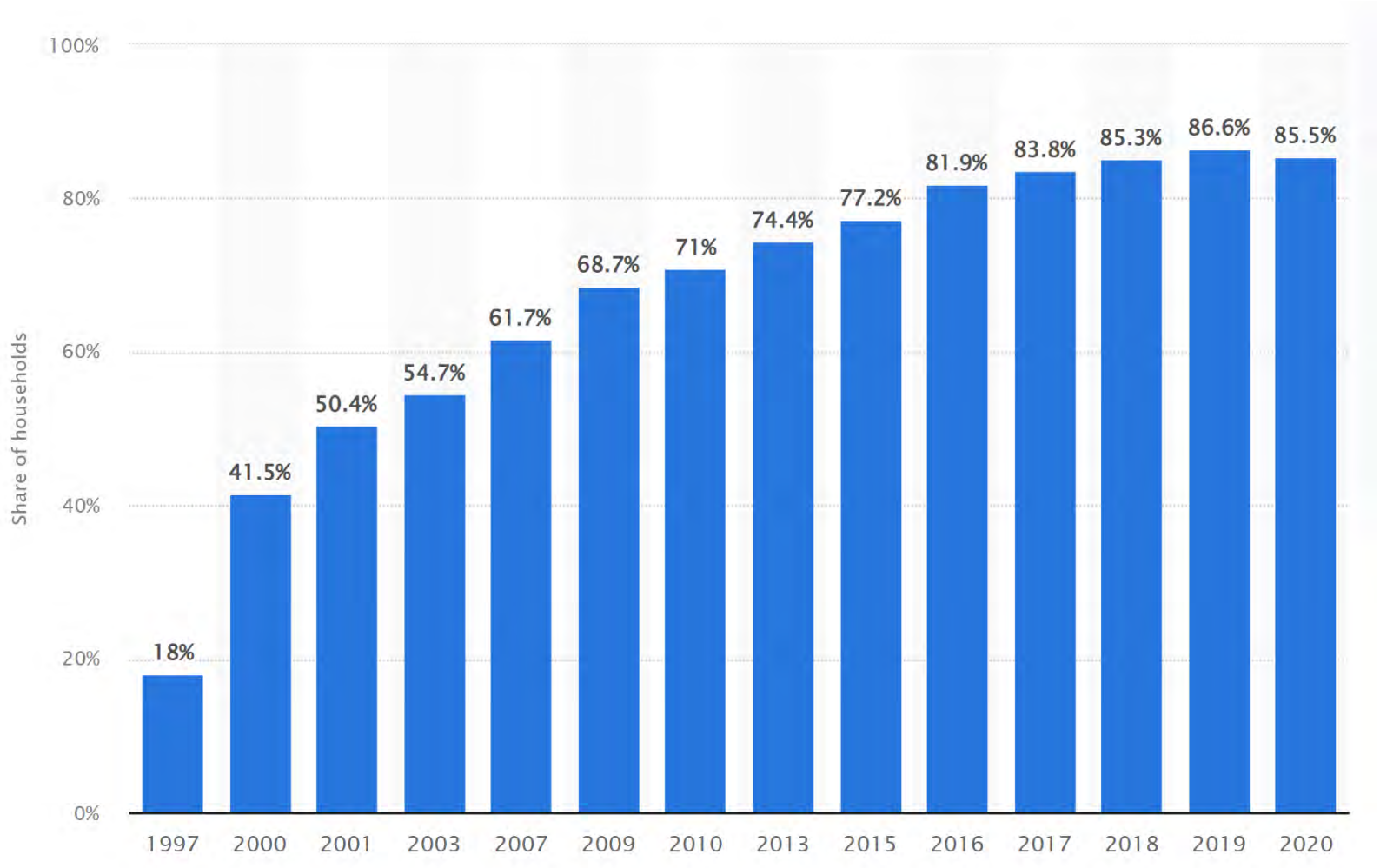
2015

Number of internet users worldwide from 2005 to 2021 (in millions)



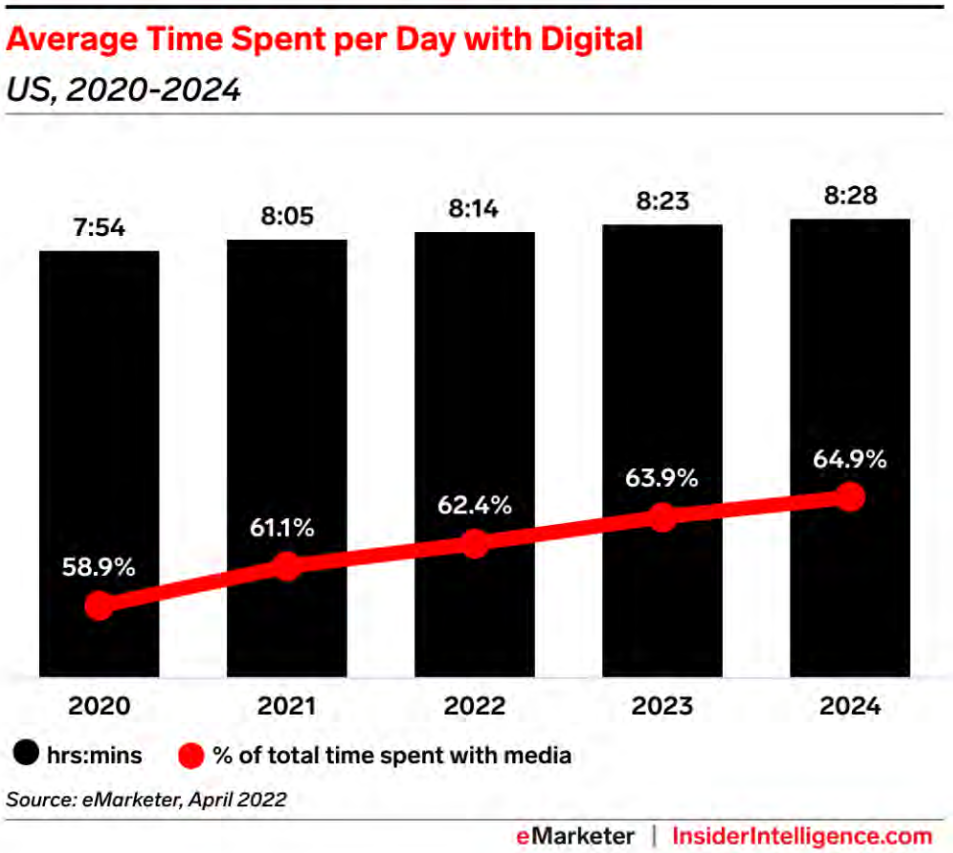
Source: https://www.statista.com/statistics/273018/number-of-internet-users-worldwide/

Percentage of households with internet use in the United States: 1997 to 2020



https://www.statista.com/statistics/189349/us-households-home-internet-connection-subscription/

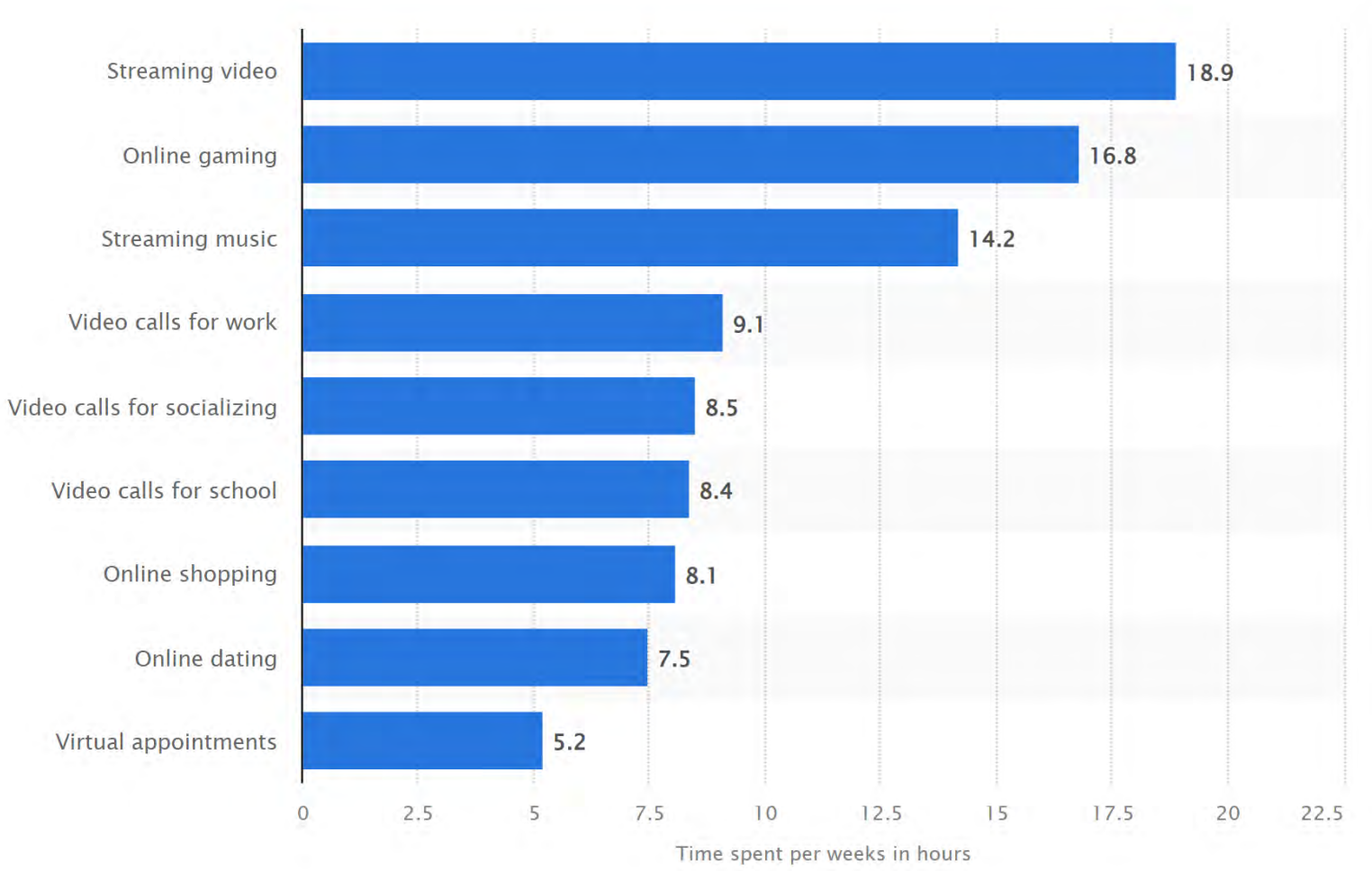
How much time are we spending staring at screens?



"Digital's growth is driven by increasing time spent with **smartphones and other connected devices**, which are making up for losses in the desktop/laptop and tablet categories."

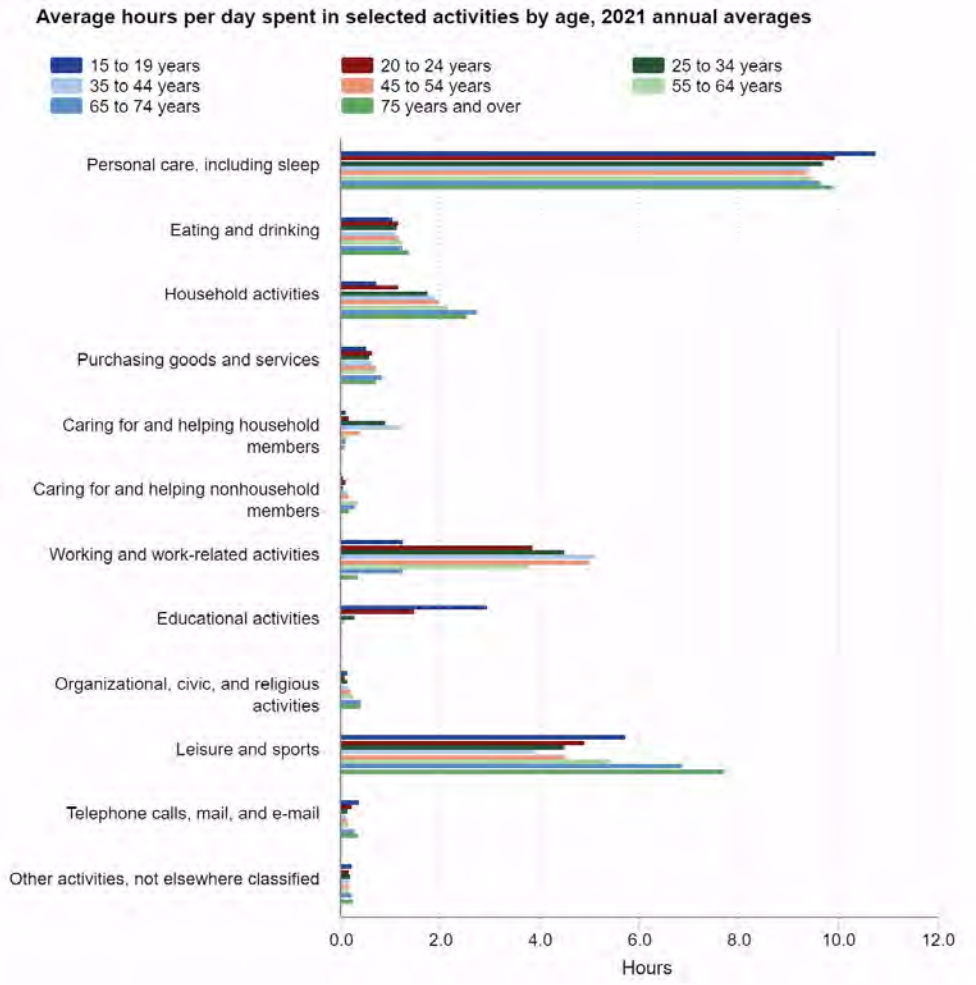
Source: https://www.insiderintelligence.com/content/us-adults-spending-more-time-with-media

What are we doing online?



Most popular weekly online activities for internet users in the United States as of January 2022, by time spent, Source: https://www.statista.com/statistics/1292983/weekly-time-spent-us-users-online-activities/

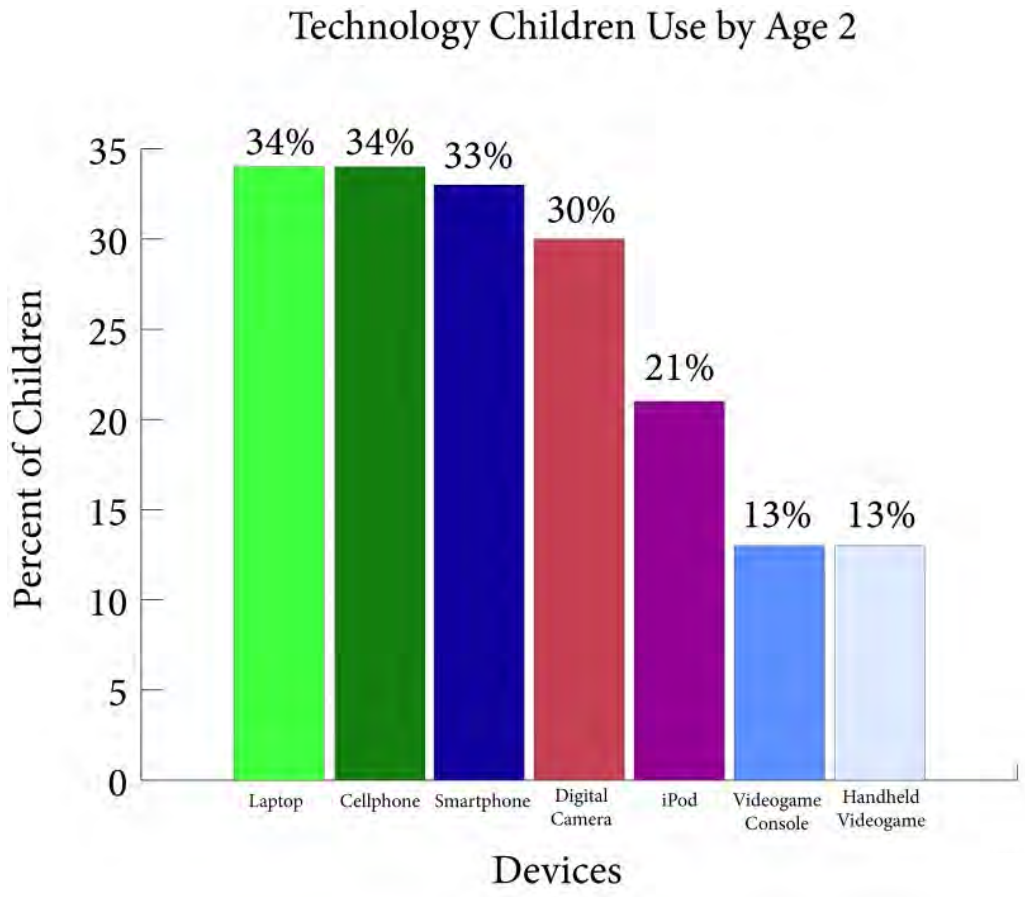
How We Spend Our Time: American Time Use Survey



Data refer to all days of the week. Estimates are annual averages for the civilian noninstitutional population age 15 and over unless noted. Activities refer to an individual's main activity. Other activities done simultaneously are not included.

Activities	
Personal care, including sleep	9.8
Eating and drinking	1.2
Household activities	1.9
Purchasing goods and services	0.7
Caring for and helping household members	0.4
Caring for and helping nonhousehold members	0.2
Working and work-related activities	3.1
Educational activities	0.6
Organizational, civic, and religious activities	0.2
Leisure and sports	5.5
Telephone calls, mail, and e-mail	0.2
Other activities, not elsewhere classified	0.2
	24.0

Growing Up on Technology

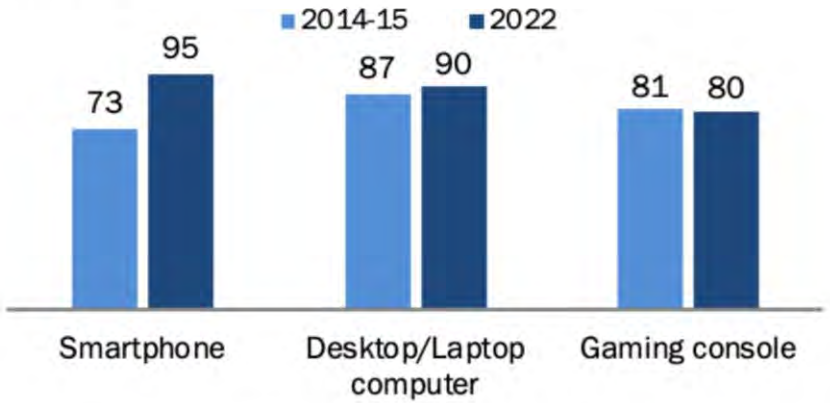


Source: American Academy of Pediatrics

Teen Access and Use of Smartphones

Nearly all teens in 2022 have access to a smartphone, up from 73% in 2014-15

% of U.S. teens who say they have access to the following devices



Note: Teens refer to those ages 13 to 17. Those who did not give an answer are not shown. The 2022 question wording further clarified access at home.
Source: Survey conducted April 14-May 4, 2022.
"Teens, Social Media and Technology 2022"

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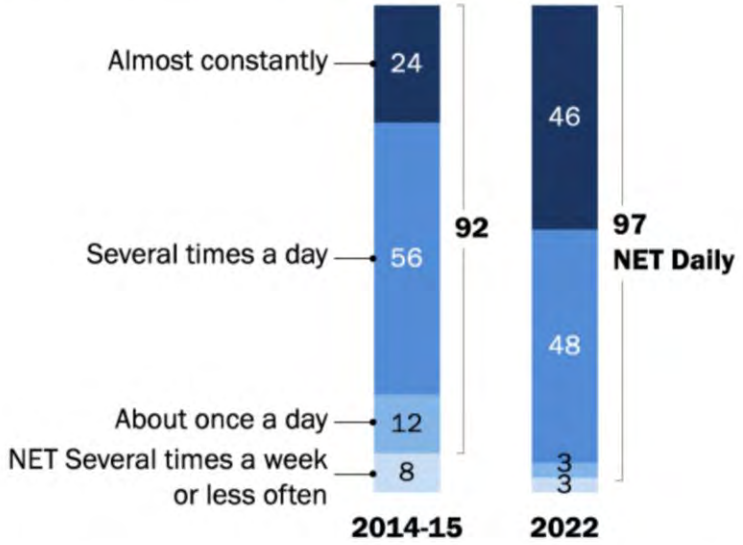
Nearly half of teens now say they use the internet 'almost constantly'

% of U.S. teens who say they use the internet ...



Note: Teens refer to those ages 13 to 17. Figures may not add up to the NET values due to rounding. Those who did not give an answer are not shown.
Source: Survey conducted April 14-May 4, 2022.
"Teens, Social Media and Technology 2022"

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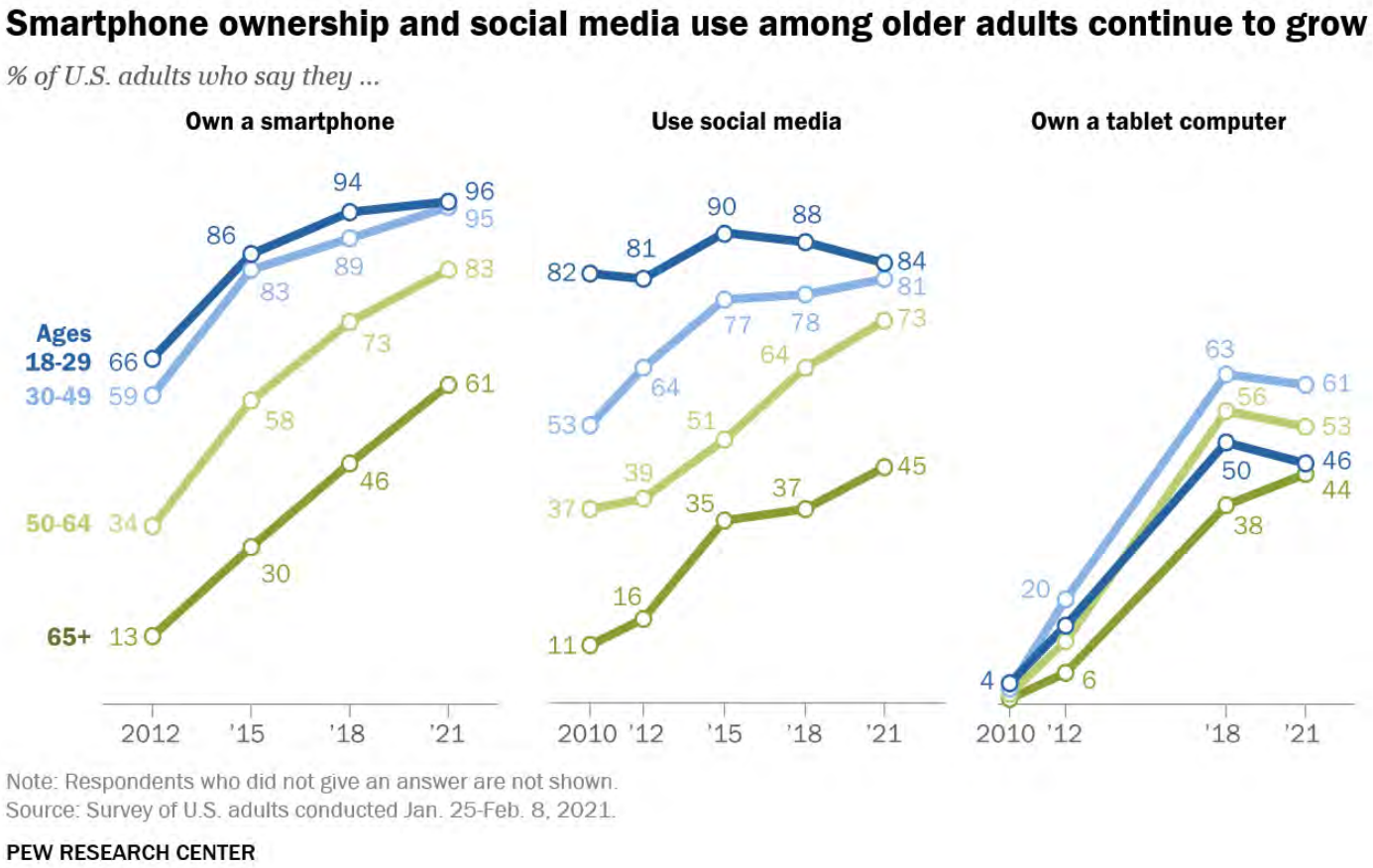
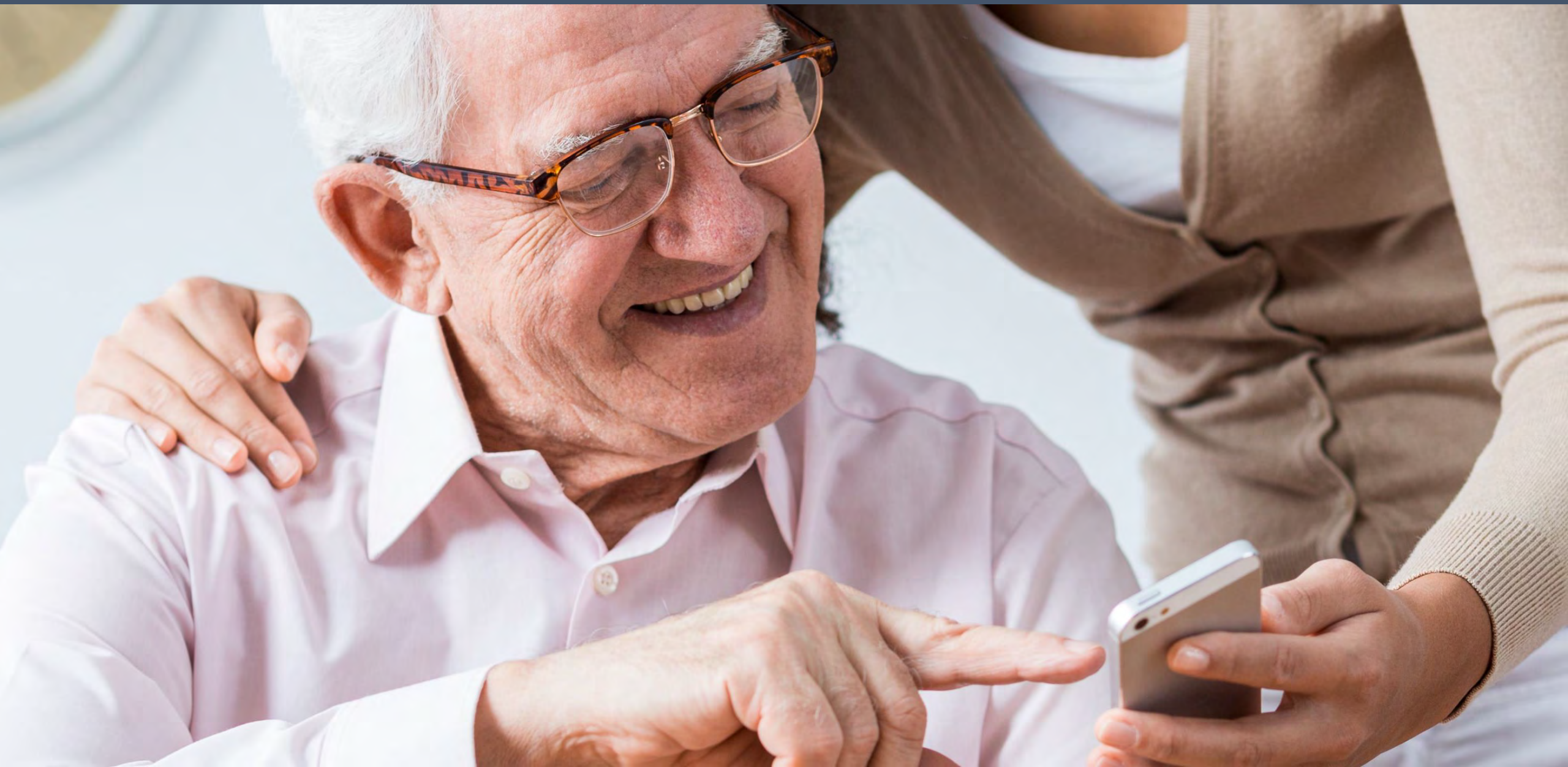
Older Adults Usage Growing



Living with Technology

Living with Technology



Benefits, Risks, and Costs of Digital Technology

Technology Assessment—I
Weighing the Benefits and Risks of New Technologies

Chauncey Starr

The need for assessing the risks to society of technical advances is now widely recognized. But to what extent is society willing to accept the dangers along with the benefits derived from the products of research? This paper suggests an approach for a quantitative benefit vs. cost measure.

The evaluation of technical approaches to solving societal problems customarily involves the relationship between potential technical performance and the required investment of societal resources. Although such performance versus cost relationships are clearly useful for choosing between alternative solutions, they do not by themselves determine how much technological utilization a society can justify purchasing. This latter determination requires, additionally, a social benefit and justified social cost relationship. The two relationships may then be used jointly to determine the optimum investment of societal resources in a technological approach to a social need.

Technological analyses for disclosing the relationship between expected performance and monetary costs are a traditional part of all engineering planning and design. The inclusion in such studies of *all* societal costs (indirect as well as direct) is less customary, and obviously makes the analysis more difficult and less definitive. In contrast, social value analyses as a function of technical performance are not only uncommon but are rarely quantitative. Yet we know that implicit in every nonarbitrary national decision on the use of technology is a trade-off of societal benefits and societal costs.

In this presentation, I offer an approach for establishing a quantitative benefit versus cost measure for an important element in our spectrum of social values—specifically, accidental deaths arising from

Chauncey Starr is Dean of Engineering and Applied Science at the University of California, Los Angeles. This paper was presented at the Symposium of Public Safety, National Academy of Engineering in Spring, 1969.

Original article

Brain health consequences of digital technology use

Gary W. Small, MD; Jooyeon Lee, MD; Aaron Kaufman, MD; Jason Jalil, MD; Prabha Siddarth, PhD; Himaja Gaddipati, DO, ScM; Teena D. Moody, PhD; Susan Y. Bookheimer, PhD

Emerging scientific evidence indicates that frequent digital technology use has a significant impact—both negative and positive—on brain function and behavior. Potential harmful effects of extensive screen time and technology use include heightened attention-deficit symptoms, impaired emotional and social intelligence, technology addiction, social isolation, impaired brain development, and disrupted sleep. However, various apps, videogames, and other online tools may benefit brain health. Functional imaging scans show that internet-naive older adults who learn to search online show significant increases in brain neural activity during simulated internet searches. Certain computer programs and videogames may improve memory, multitasking skills, fluid intelligence, and other cognitive abilities. Some apps and digital tools offer mental health interventions providing self-management, monitoring, skills training, and other interventions that may improve mood and behavior. Additional research on the positive and negative brain health effects of technology is needed to elucidate mechanisms and underlying causal relationships.

 Dialogues Clin Neurosci 2020;22(2):179-187. doi: 10.31887/DCNS.2020.22.2/gsmall

Keywords: emotional intelligence; digital technology; internet; media; neural activation; online searching

Introduction

During the past three decades, digital technology has transformed our daily lives. People at every age are now taking advantage of the vast amounts of available online information and communication platforms that connect them with others. This technology helps us to generate, store, and process enormous amounts of information and interact with each other rapidly and efficiently.

Most adults use the internet daily, and nearly one out of four report being online most of the time.[1] Because of this transformation to an online world, neuroscientists have begun focusing their attention on how digital technology may be changing our brains and behavior. The emerging data suggest that constant technology use impacts brain function and behavior in both positive and negative ways. For example, older individuals suffering from cognitive decline could use the internet to access information to help them remain independent longer; however, many seniors with cognitive complaints are reluctant or unable to adopt new technologies.[2] Our group's functional magnetic resonance imaging (MRI) research tracking neural activity during simulated internet searches suggests that simply searching online may represent a form of mental exercise that can strengthen neural circuits.[3] By contrast, the persistent multitasking that is characteristic of most technology users impairs cognitive performance.[4] In this review, we highlight some of the research suggesting potential benefits and possible risks of using digital technology.

Author affiliations: Department of Psychiatry and Biobehavioral Sciences and Semel Institute for Neuroscience and Human Behavior, the UCLA Longevity Center, David Geffen School of Medicine at the University of California, Los Angeles, California, US **Address for correspondence:** Dr Small, Semel Institute, 760 Westwood Plaza, Los Angeles, California 90024, US (email: gsmall@mednet.ucla.edu)

Benefits of Digital Technology

STRATEGIES	BRAIN-HEALTH PROMOTING TARGETS
Online searching	Neural activation of circuits controlling decision-making and complex reasoning
Cognitive training games	Global cognition, memory (immediate, delayed, and working), attention, learning abilities
Racecar videogames with distracting road signs	Multitasking skills
N-back task training games	Working memory, fluid intelligence
Action videogames	Visual attention, reaction time, task-switching abilities
Monitoring apps	Heart rate, breathing patterns
Psychotherapy, educational apps	Mood, sleep, social support

Table I. Health-promoting digital technology strategies for the aging brain.

Small et al. (2020). Brain Health consequences of digital technology use, Dialogues in Clinical Neuroscience, Vol. 22, No. 2.

Benefit of Videogames

Surgeons who played videogames more than 3 hours each week made 37% fewer surgical errors, were 27% faster in response times, and scored 42% better in measures of laparoscopic and suturing skills than surgeons who do not play videogames.

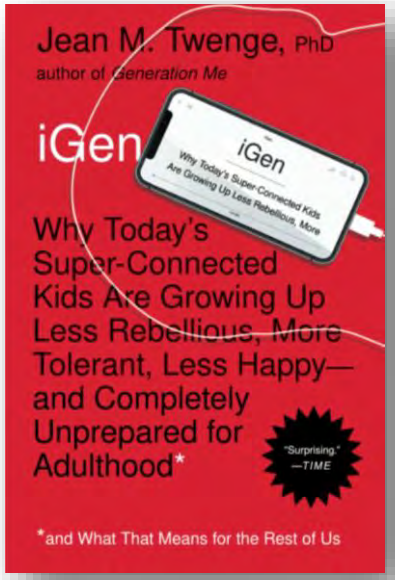
Rosser JC, Lynch PJ, Cuddihy L, et al. The impact of video games on training surgeons in the 21st century. Arch Surg. 2007; 142(2): 181-186.

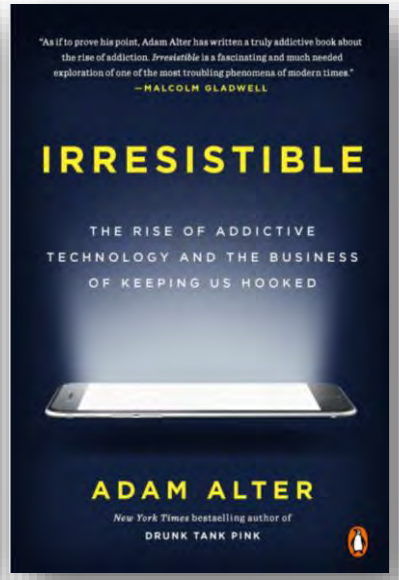
Risks/Costs

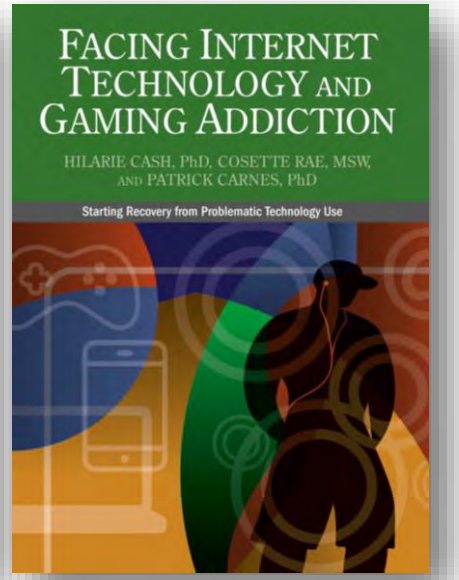
- Impaired emotional and social intelligence
- Social Isolation
- Sleep disruption
- Increase in mindlessness
- Adverse impact on brain development
  - Reduced attention span
  - Decreased working memory
  - Decreased meta-cognitive awareness
  - Decreased coherence (organization) of mind
  - Distracted concentration
  - Mind more reactive

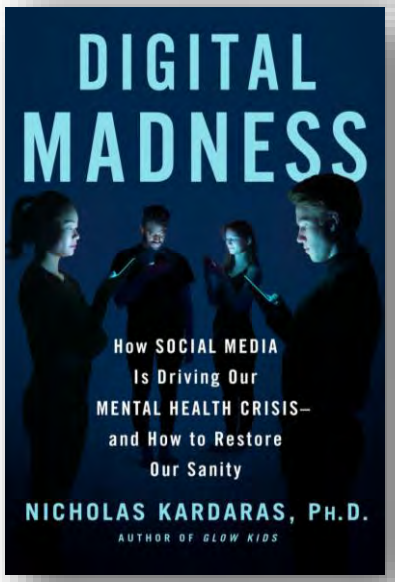
Small, GW, Lee, J., Kaufman, A, et al. (2020). Brain health consequences of digital technology use. Dialogues in Clinical Neuroscience. Vol. 22, No. 2, 179-187.

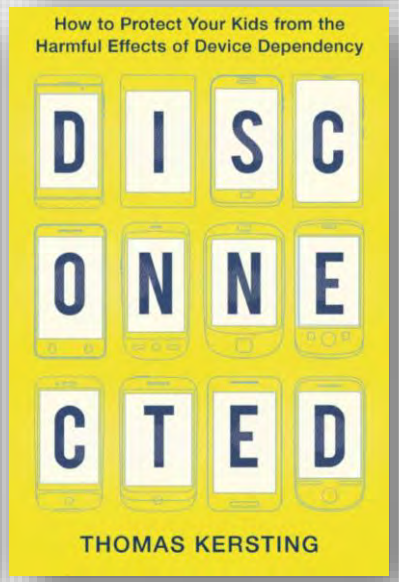
Risks/Costs

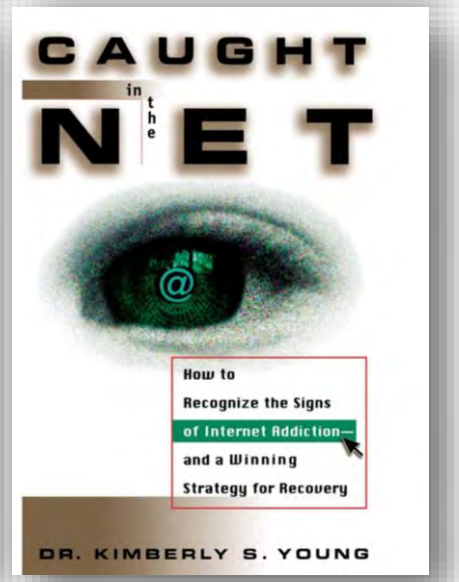

Jean M. Twenge, PhD
author of Generation Me
iGen
Why Today's Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy—and Completely Unprepared for Adulthood*
"Surprising." —TIME
*and What That Means for the Rest of Us


"As if to prove his point, Adam Alter has written a truly addictive book about the rise of addiction. Irresistible is a fascinating and much needed exploration of one of the most troubling phenomena of modern times." —MALCOLM GLADWELL
IRRESISTIBLE
THE RISE OF ADDICTIVE TECHNOLOGY AND THE BUSINESS OF KEEPING US HOOKED
ADAM ALTER
New York Times bestselling author of DRUNK TANK PINK


FACING INTERNET TECHNOLOGY AND GAMING ADDICTION
HILARIE CASH, PhD, COSETTE RAE, MSW, AND PATRICK CARNES, PhD
Starting Recovery from Problematic Technology Use


DIGITAL MADNESS
How SOCIAL MEDIA Is Driving Our MENTAL HEALTH CRISIS— and How to Restore Our Sanity
NICHOLAS KARDARAS, PH.D.
AUTHOR OF GLOW KIDS


How to Protect Your Kids from the Harmful Effects of Device Dependency
DISCONNECTED
THOMAS KERSTING


CAUGHT in the NET
How to Recognize the Signs of Internet Addiction— and a Winning Strategy for Recovery
DR. KIMBERLY S. YOUNG

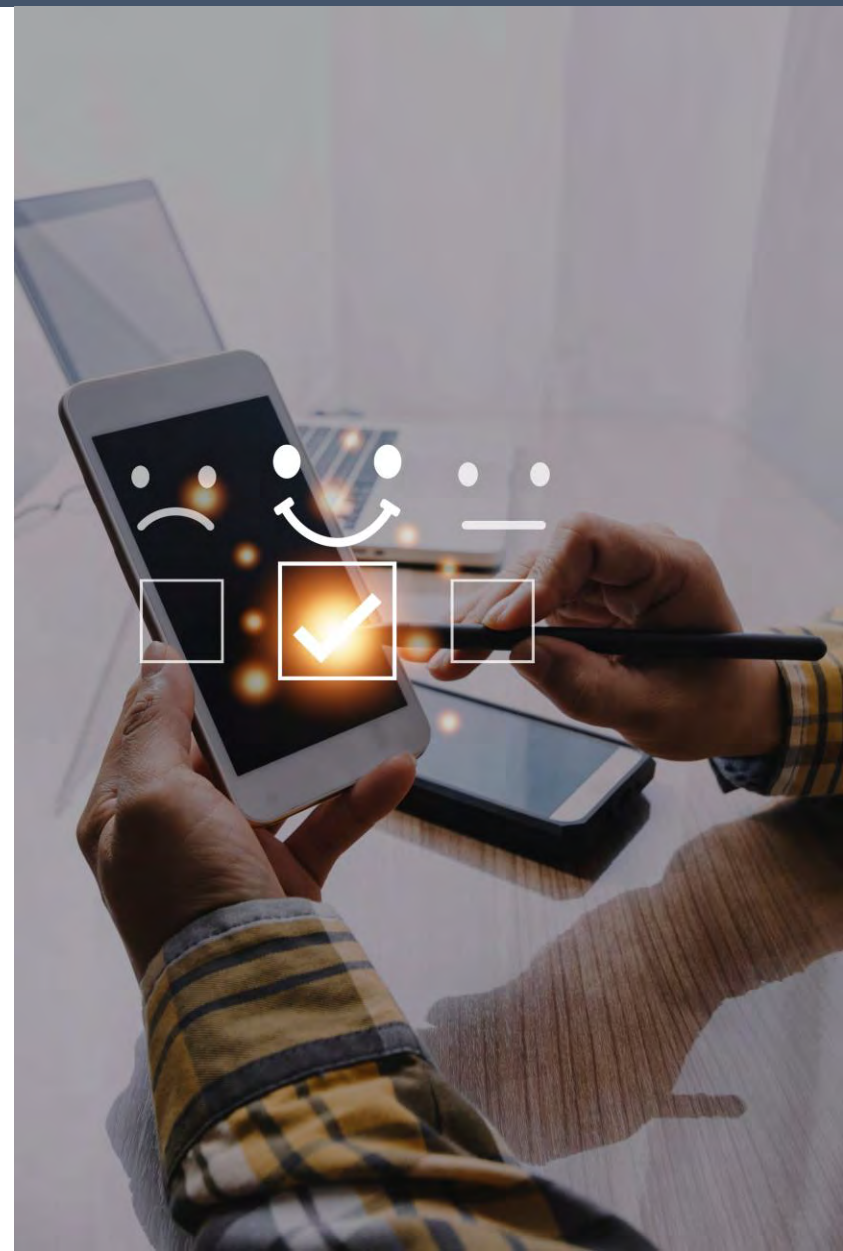
Assessing Our Relationship with Technology

What digital devices do you use regularly?
(Smart phone, computer, laptop, tablet, smart television, smart watch, etc.)

How do you use the devices?
(Always on, work, school, pleasure, etc.)

How much time do you spend with each device?
(Track for a few days, uses devices to help)

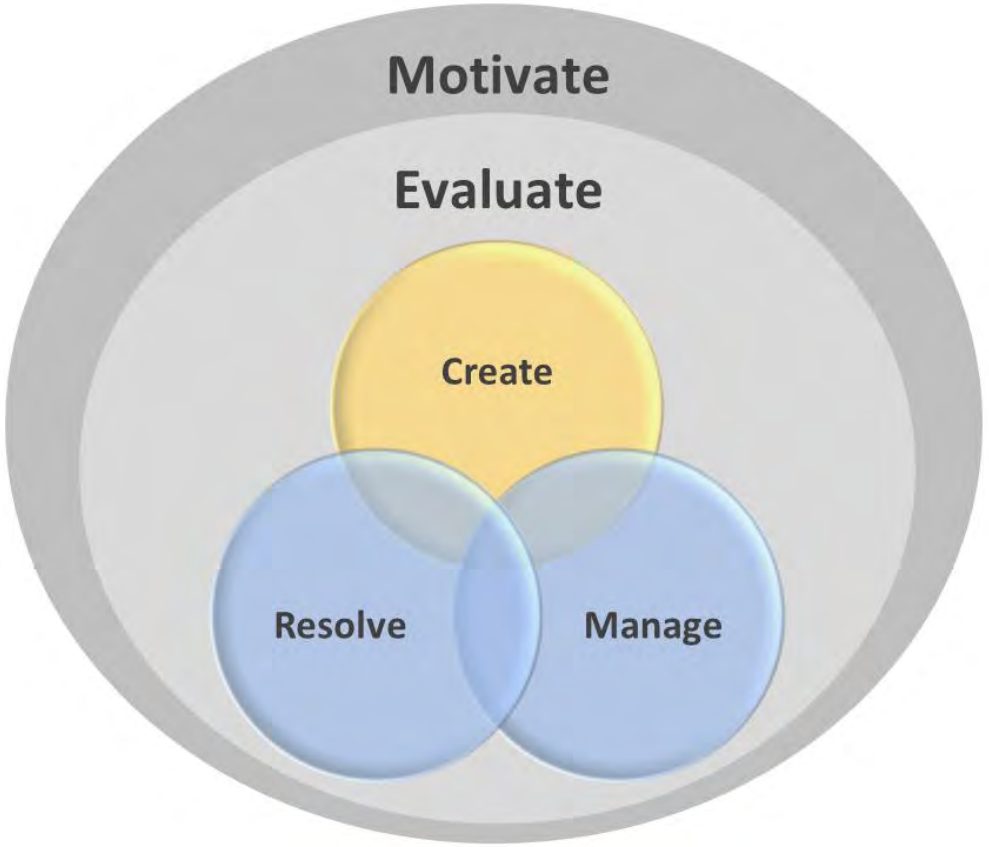
How do you feel about your technology use?
(Enhances life, detracts, benefits/risks)



Assessing Risk of Addiction to Technology

- **Other addictions present?**
- **Underlying drivers present?**
- **Consequences present?**

If Addiction Potentially Present… 5-Actions!



- Engage in Culture Heals™ or the NM 5-Actions Program™
- Learn about addiction and pathways for addressing, then take action…
- Engage in interventions to counteract excessive use of technology

Treating Problematic Use of the Internet in Adolescents

electronics

MDPI

Review

Intervention Programs for the Problematic Use of the Internet and Technological Devices: A Systematic Review

Elizabeth Cañas * and Estefanía Estévez

Department of Health Psychology, Universidad Miguel Hernández de Elche, 03202 Elche, Spain; eestevez@umh.es

* Correspondence: ecanas@goumh.umh.es; Tel.: +34-965-919-466

Abstract: The intensive use of the Internet and communication technologies among adolescents has increased addiction and/or their problematic use. The innovative and revolutionary development of this technology can have negative effects on the mental and physical health of its users, and it seems to have a greater impact on adolescents. As this is causing a public health problem, the objective of this study was to review the different intervention and prevention programs for this problem in adolescents. A total of 14 programs met the inclusion criteria. The analysis of the programs allows for the identification of effective intervention designs for prevention, and also for the treatment of the current problems derived from the use of the Internet and technological devices among adolescent users.

Keywords: intervention programs; Internet use; technological device use; adolescence

check for updates

Citation: Cañas, E.; Estévez, E. Intervention Programs for the Problematic Use of the Internet and Technological Devices: A Systematic Review. *Electronics* **2021**, *10*, 2923. https://doi.org/10.3390/electronics10232923

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1. Introduction

The fast development of the Internet, as well as the intensive and continuous use of new information and communication technologies (ICTs), has provided numerous ways of communicating and interacting with others for the general population. However, the innovative and revolutionary development of these technologies seems to have a greater impact on adolescents [1].

The greater accessibility of the new communication media has increased the addiction and/or problematic use rates of the Internet, making it a potential health problem in today's society, and for which there is an increasing amount of research [2]. Internet addiction is characterized by excessive or poorly controlled preoccupations, urges, or behaviors with regard to computer use and Internet access that leads to impairment or distress, and that may indeed interfere with the daily functioning of individuals. This behavior can include addiction to online video games, technological devices, and social networks [3]. Although the DSM-V does not yet have a specific classification for this addiction, it has classified it within "Substance abuse and addiction disorders", as it is a compulsive behavior without substance abuse [4]. Evidence suggests that people who make problematic use of the Internet have a brain structure similar to people with dependencies on chemical substances (e.g., drugs or alcohol), which is reflected in the alteration of the prefrontal cortex [5]. Therefore, Internet addiction and/or problematic Internet use, like other dependency disorders, affect the brain's pleasure center, causing the release of dopamine. These chemical changes cause increasingly more activity and/or time needed to induce the same pleasant response, creating a dependency [6].

The problematic use of the Internet and new technologies can have negative effects on the mental and physical health of its users [7]. Some of the problems associated with these behaviors are loneliness and social isolation, aggression, anxiety [8,9], headache [10], and sleep disorders [11], among other somatic symptoms [12]. In addition, other problems, such as a lack of concentration, memory loss, fatigue, and stress have been reported [13,14]. Previous studies have recognized that Internet and mobile phone addiction have negative

- Programs Based on **Cognitive Behavioral Therapy**
- Programs Based on **Educational Intervention**
- Programs based on **Positive Psychology**
- Programs Based on **Multifamily Group Therapy**

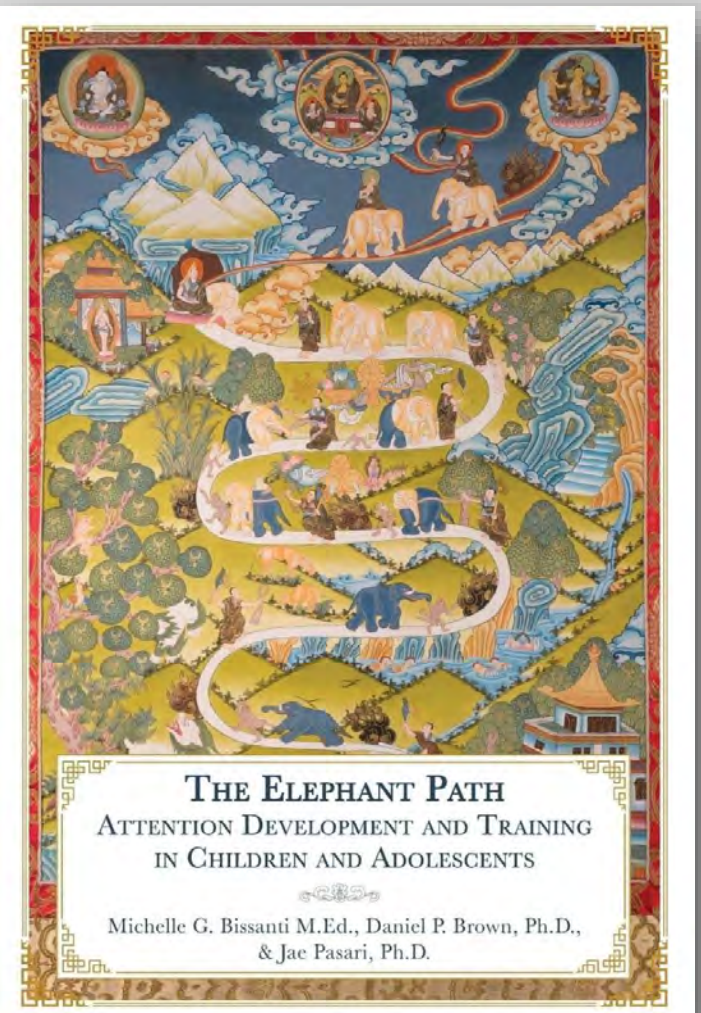
The findings of the analyzed studies corroborate the idea that **intervention programs for adolescents are necessary**, not only to prevent, but also to treat current problems derived from the use of the Internet and technological devices.

Proactively Protecting Present Moment Awareness

"**Our attention** is one of our most valuable assets that we often don't tend to very much. It's one of those things we often take for granted, and then sometimes, doesn't get used in the powers that it could have."

Kimberly Carson, MPH, C-IAYT

Mitigating Attentional Risks



…although mindfulness training is very popular, it claims to do too much, and its skill-set doesn't readily map onto the priorities for training attention in children.

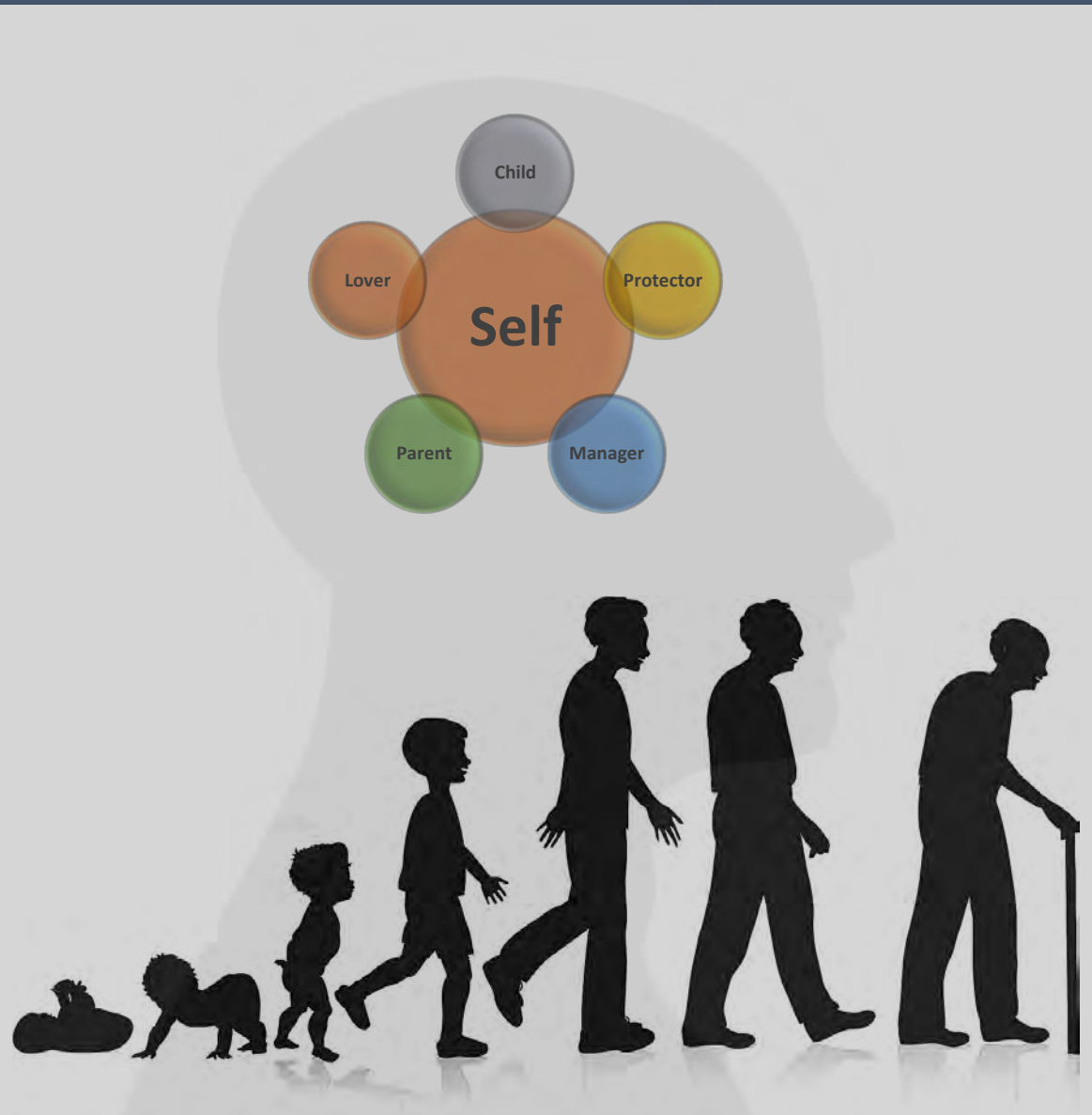
In this generation of children, the priorities are to **train the executive attentional system and the executive function system, and reduce mind-wandering** (p. 173).

Three Tools of Concentration Training

1. Directing the mind to the concentration object
2. Engaging the concentration object more intensely
3. Applying meta-cognitive awareness to detect distraction and stay on task

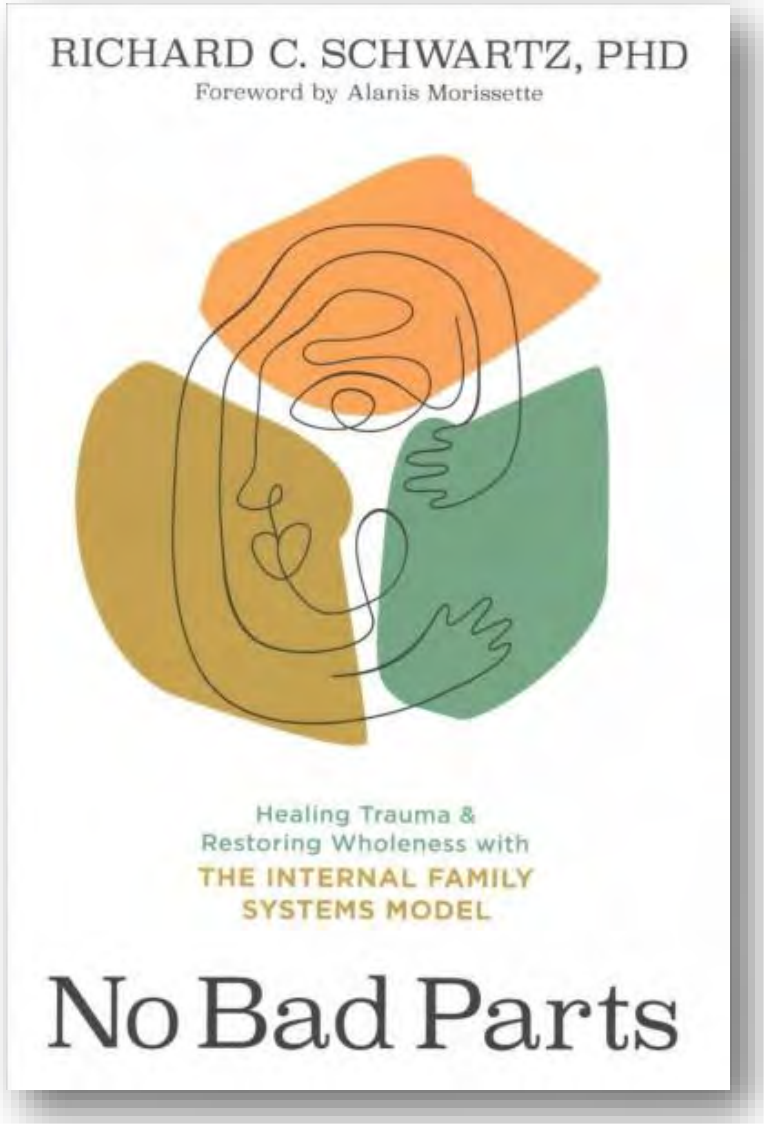
Source: The Elephant Path: Attention Development and Training in Children and Adolescents.

Managing Our Internal Family of Parts



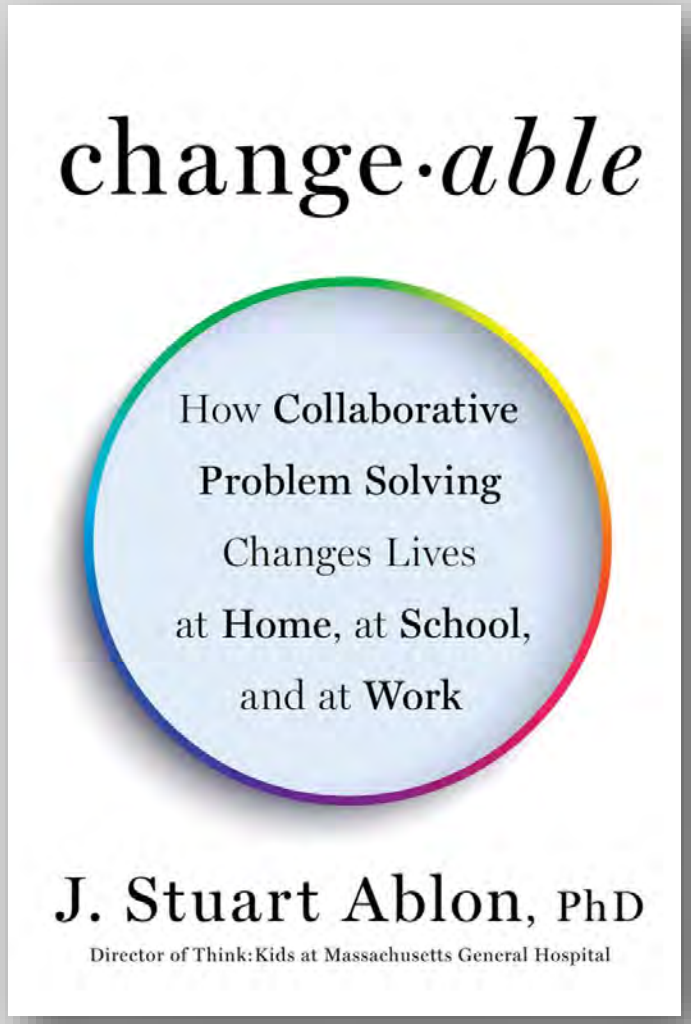
- We live a life of parts, and our parts keep us veiled from our true nature
- Some parts become overly engaged with technology (Managers/Protectors)
- While use of technology is impacting brain development and functioning, it also impacts our internal family of parts – become more fragmented and reactive
- Technology distances us from our True Self – cuts off the direct path to Self

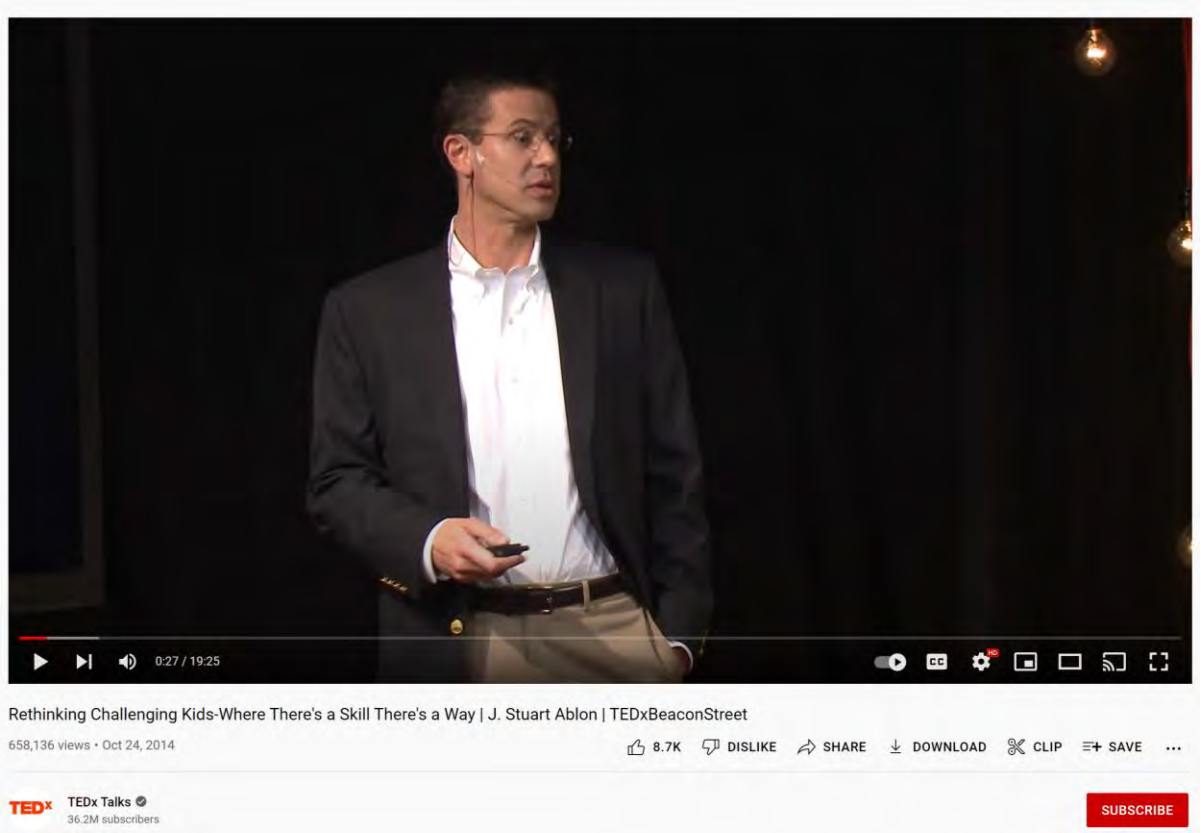
Managing Our Internal Family of Parts



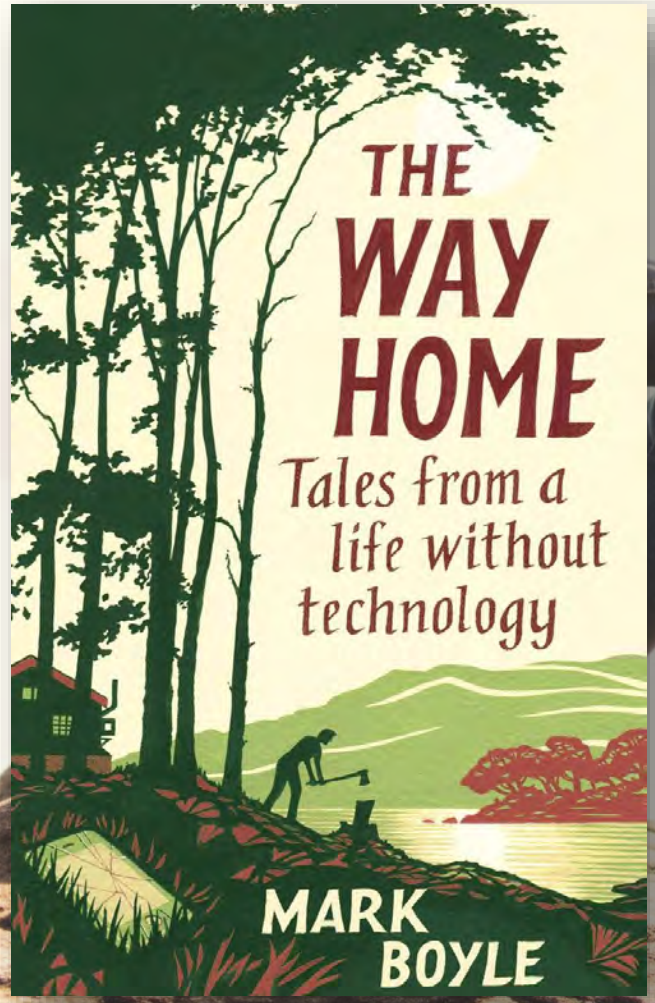
- We live a life of parts, and our parts keep us veiled from our true nature
- Some parts become overly engaged with technology (Managers/Protectors)
- While use of technology is impacting brain development and functioning, it also impacts our internal family of parts – become more fragmented and reactive
- Technology distances us from our True Self – cuts off the direct path to Self

Collaborative Problem Solving





Digital Vacation



Summary

- Technology is now ubiquitous, playing a role in almost all aspects of our life today
- There are benefits, risks, and costs to technology that we must understand and manage
- When addiction to technology is present, it follows a general model of addiction that is treatable… 5-Actions
- **Awareness – present moment – is where life is lived. We need to cultivate practices (meta-cognitive skills) that allow us to be in control of how we spend our precious time.**


Questions and Discussion