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Literature Review:
Effects of Watching Digital Videos on Viewer Well-Being

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UXRS Rapid Research

April 2018

OBJECTIVE:

Provide a wealth of insights to identify themes that are important in understanding the negative effects of digital video watching on overall viewer well-being.

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METHODOLOGY:

A review of external research reports, empirical papers, and newspaper articles were combined into this presentation of findings.

Research focused on identifying scientific evidence to validate hypotheses around the negative cognitive, behavioral, and physiological effects that video watching can have on users.

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RESEARCH QUESTIONS:

1) What are the negative effects that video watching has on user's wellbeing (i.e. cognitive, behavioral, etc)?
1) What scientific evidence supports identification of those effects?
1) How do these effects relate to teens/young adults?

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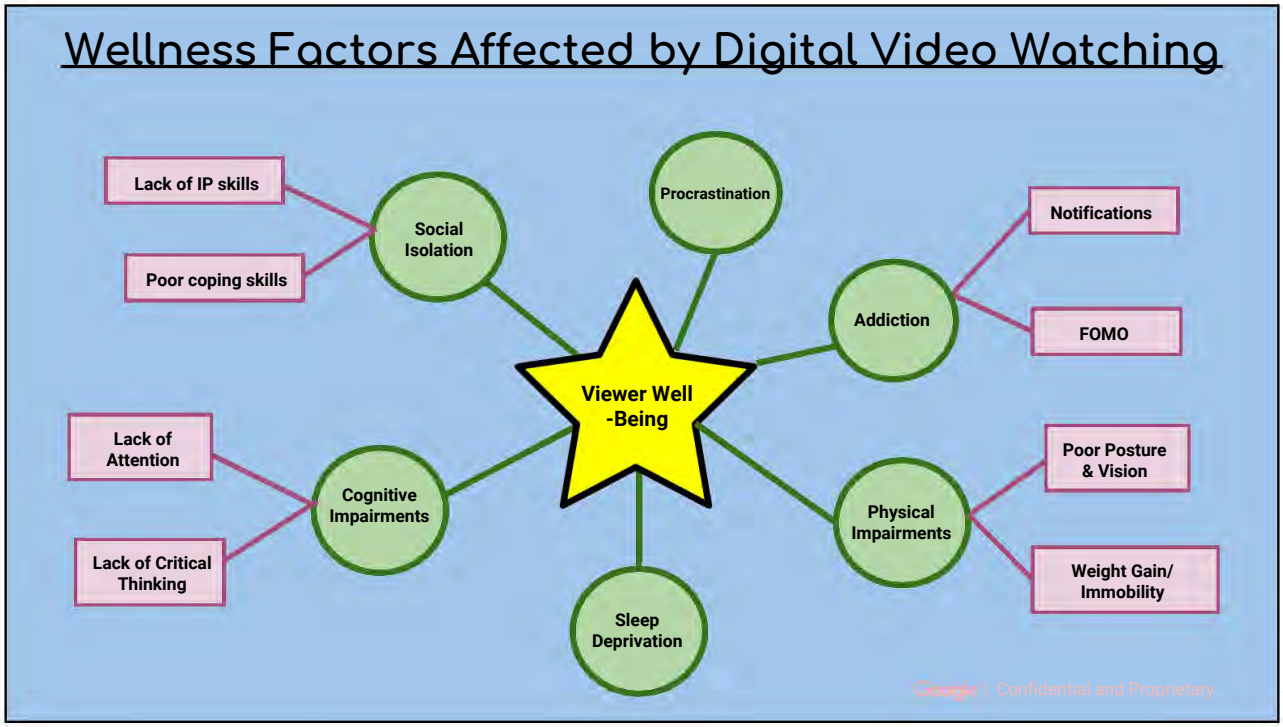
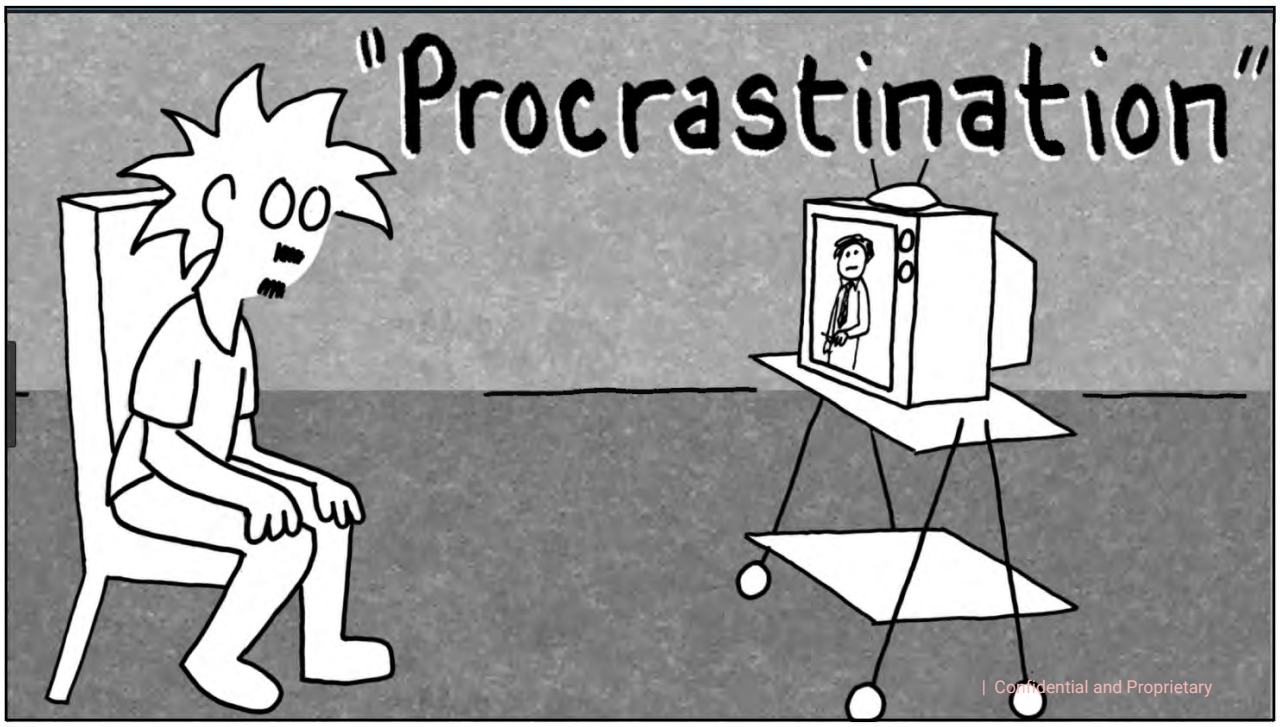

Wellness Factors Affected by Digital Video Watching
Lack of IP skills
Poor coping skills
Social Isolation
Procrastination
Notifications
FOMO
Addiction
Viewer Well -Being
Lack of Attention
Lack of Critical Thinking
Cognitive Impairments
Sleep Deprivation
Poor Posture & Vision
Weight Gain/ Immobility
Physical Impairments
Google | Confidential and Proprietary



Procrastination is the most commonly referenced negative effect of video watching

- **There is currently no specific research on procrastination caused by human-computer interaction!**
  - Difficult to determine what is problematic/waste of time when watching videos
- **Problematic Internet Use (PIU):** multidimensional syndrome that consists of cognitive, emotional, and behavioral symptoms that result in difficulties with managing one's offline life.
  - Overlaps with addiction
  - Often irrational and not under conscious control
  - Descends into dysfunction & causes one to avoid working on an intended task
- **"Just One More Video" Effect**
  - Very simple to watch an ongoing sequence of videos (autoplay)
  - Often followed by feelings of guilt

(Breems & Basden, 2012)

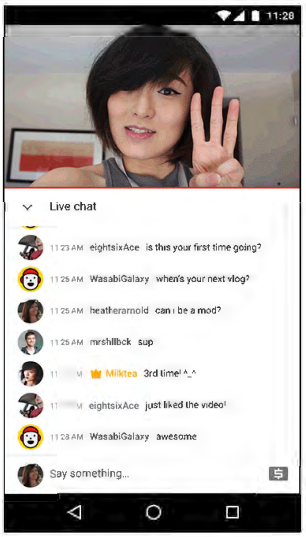
Video watching on the job is becoming a major distraction

- **Research suggests that there is an increase in the amount of distraction** caused by watching videos & time spent on social media during work hours.
- **Non-Work Related Internet Use (NWRIU) is typically a result of:**
  - Boredom
  - Job dissatisfaction
  - Distant rewards/incentives

(Breems & Basden, 2012)

YouTube “stickiness” is caused by the interactive nature of our platform

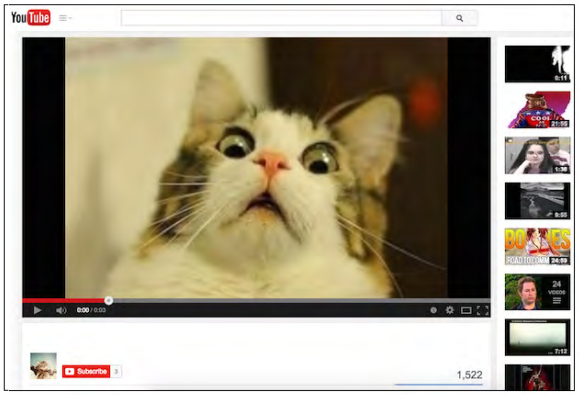
- **YouTube allows for users to watch videos, but also to interact with creators and other viewers.**
- **Users receive notifications when someone makes a post or comment on a video.**
  - Interactive behavior gratifies user needs
  - Causes users to feel that they *must* be aware of what is happening on the platform
  - Keeps users on the platform longer



(Chiang & Hsiao, 2015)

Based on survey from 265 respondents

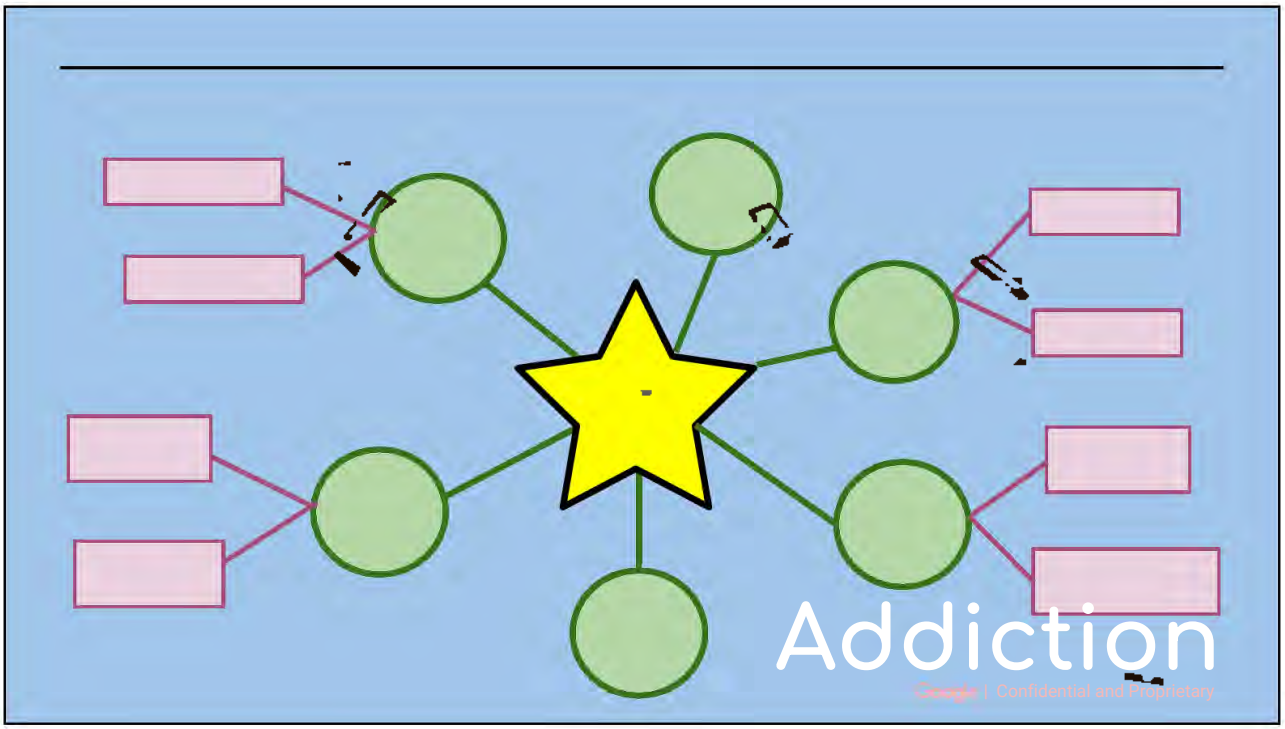
Videos are *initially* used for quick mood management, but result in excessive viewing



- Survey research suggests that **video watching is a common technique for mood management.**
- Respondents reported watching **cat videos to be in a more positive mood more quickly.**
- After one video is over, it is difficult to stop watching the videos.
- Ultimately, viewers **experience feelings of guilt** for spending so much time doing non-meaningful tasks.

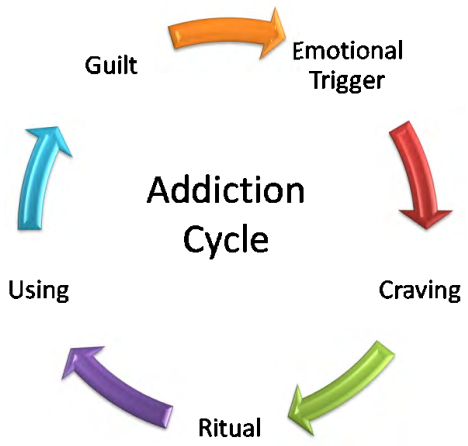
(Myrick, 2015)

Based on survey from 265 respondents


Addiction
Google | Confidential and Proprietary

Excessive video watching is related to addiction

- **Watching short videos results in a "quick fix" of dopamine**
  - Dopamine is related to feelings of reward
  - Similar to feelings of reward when using drugs or other addictive substances
- **Researchers feel that YT is built with the intention of being addictive**
  - Designed with tricks to encourage binge-watching (i.e. autoplay, recommendations, etc).
  - These "tricks" have become routine
  - Technology & well-being need to meet

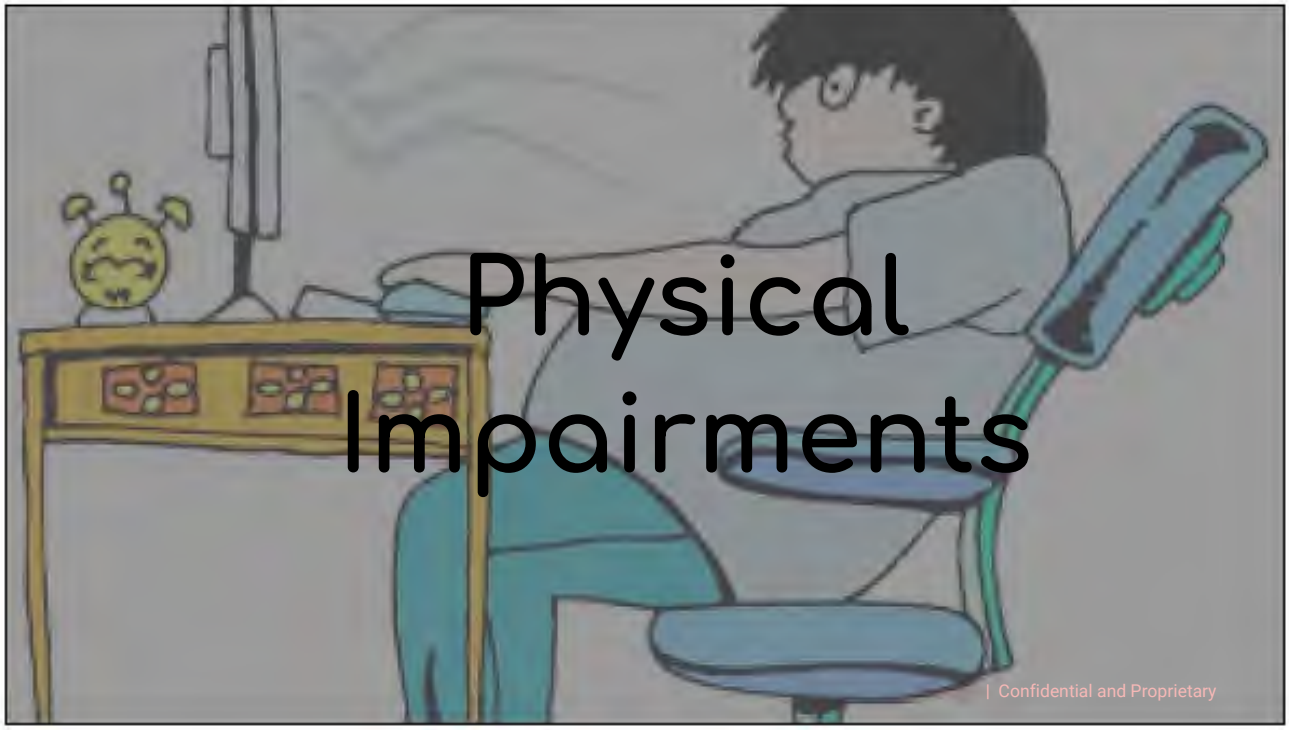


(Howard, 2012; Gunantillake, 2017)

YouTube users control what they want to watch

- YouTube is different from TV because **users can decide what they want to watch.**
- Users will **spend more time on the platform** because they continue to watch things that interest them.
- Studies show the **content people watch correlates with their personality characteristics** (i.e. sensation seeking).
- **Notifications** are a critical part of YouTube and **contribute to addiction.**
  - Users are tempted to watch videos the moment they are uploaded.

(Haridakis & Hansen, 2009; Metro Creative Connection, 2018)


Physical
Impairments
| Confidential and Proprietary

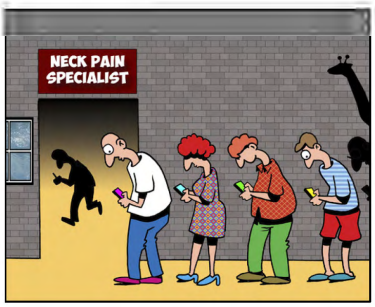
Video-watching encourages a sedentary lifestyle

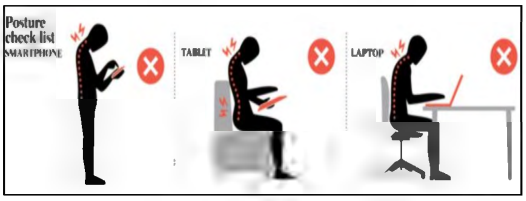
- Watching videos/TV causes **viewers to sit very still** & have **low energy expenditure.**
- Excessive video/TV watching **motivates sedentary behaviors, which are linked to obesity.**
  - Viewers are more likely to eat when watching videos
  - Reduces interest in hobbies and activities outside of the home
- Recent research shows that **sedentary behavior is reduced as awareness of it is increased.**
  - Those who recorded their behaviors in a diary study reduced their sitting behavior by 20% in following weeks.
  - Physical activity did not increase, however.

(Beers & Basden, 2012; Epstein, et al., 2011; Myrtek, 1996)

Poor posture & body aches are also a result of excessive video -watching

- **Extended screen time spent on computers is linked to poor posture.**
  - People slouch without awareness
  - Places stress on the cervical spine

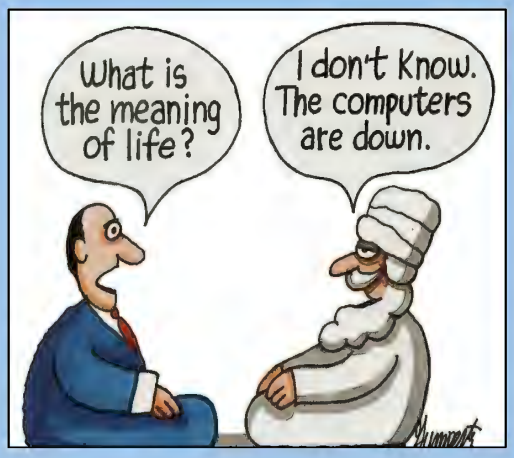


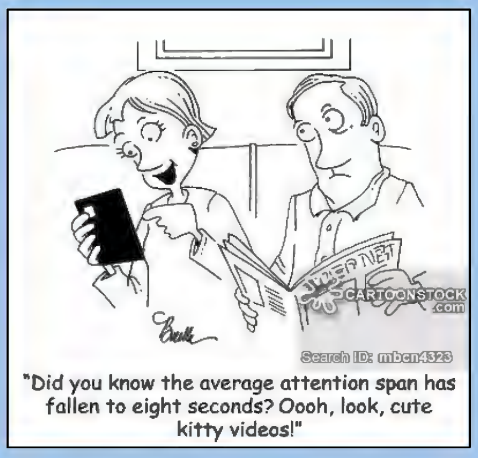


- Watching videos on mobile devices such as tablets or smartphones **causes neck pain, tense muscles, and strained eyes.**
  - Excessive screen time causes vision problems

(Peper, et al., 2017; Beers & Basden, 2012; Howard, 2012)

Cognitive Impairments





"Did you know the average attention span has fallen to eight seconds? Oooh, look, cute kitty videos!"

Over-exposure to videos leads to decreased attention spans

- People are used to **seeing large amounts of stimuli on small screens.**
  - Various buttons and UI elements fighting for a viewer's attention
  - Attention does *not* need to be shifted, however, to click on another video; distance from one video to another is minimal

- Our **attention is limited** in terms of cognitive resources; we cannot pay *equal* amounts of attention to everything at once.
  - Causes us to miss important information while at work (inattentional blindness)
  - Impacts attentiveness
- **There is a fine line between multitasking and distraction.**
  - People are used to getting overloaded with constant updates of information, but lack the ability to manage it.
  - Viewers feel that they can watch videos while doing other things, but this in fact is causing distractions.

(Beers & Basden, 2012; Gill, et al., 2012; Howard, 2012; Pew Study, 2018)

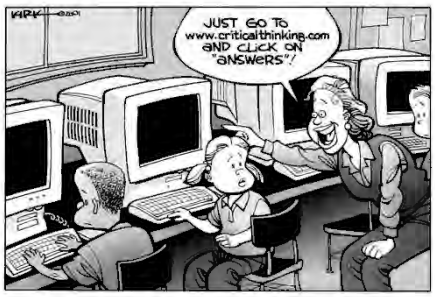
What is causing decreased attention spans?

- **1) Excitement Hypothesis**
  - Electronic media exposure is fast-paced
  - Changes focus rapidly and grabs viewer's attention
  - Makes it difficult to pay attention in less-stimulating settings (i.e. work, school)
- **2) Attraction Hypothesis**
  - We watch more content related to things we like and are interested in
  - This content is easily and quickly accessible on YouTube
- **3) Displacement Hypothesis**
  - Users feel guilty that they are doing a meaningless activity, when they could have been doing something more productive
- **Problem: How do we determine what is considered *entertainment* vs. *education*?**
  - In which cases (if any) is it acceptable to watch excessively?

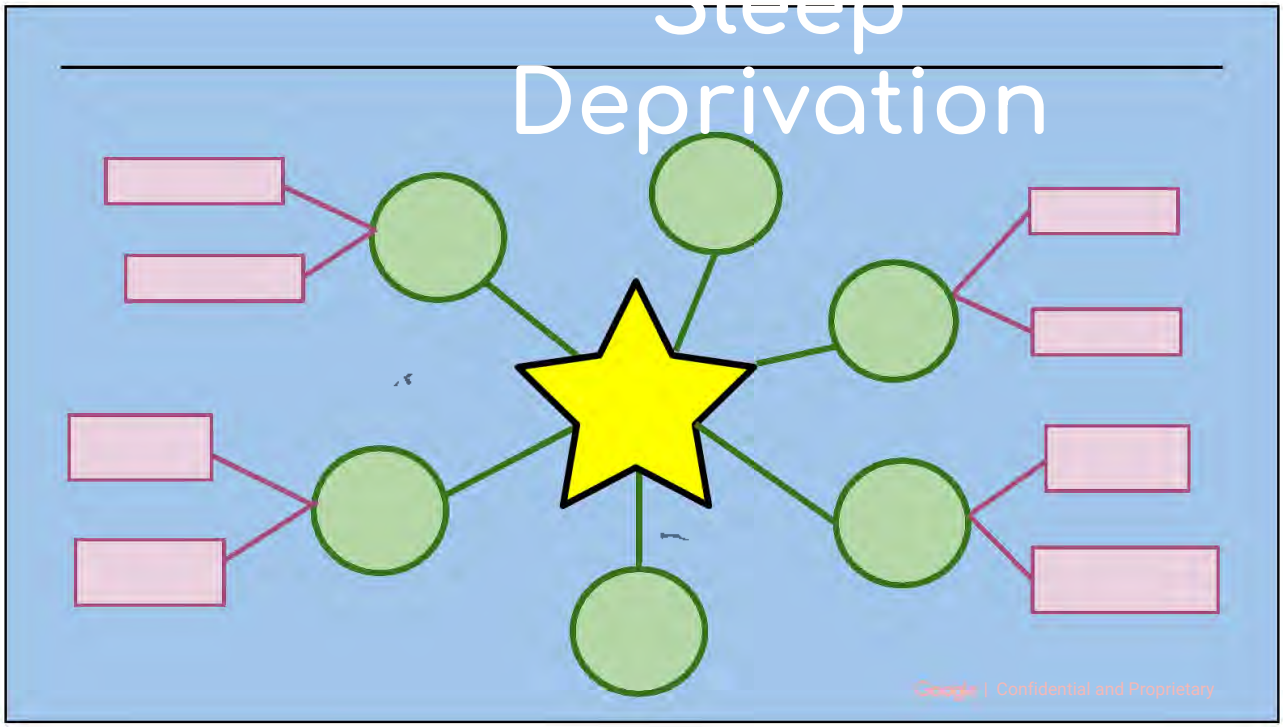
(Swing, 2012)

Easy access to the web reduces critical thinking skills

- **Research shows that people immediately turn to the web to find answers to questions.**
  - Belief that all questions must be answered online
  - Decrease in the desire to read books
  - Decrease in quality of intelligent conversations among students
  - Reduces critical thinking skills
- **Viewers often search for content on YouTube to access visuals that accompany narration.**

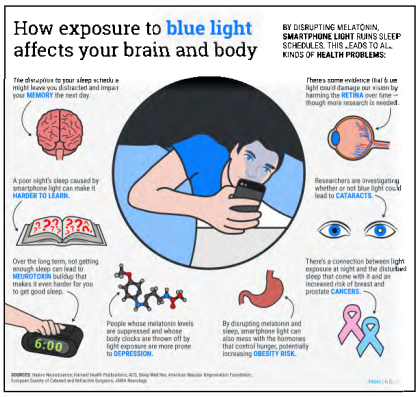


(Park, 2012)


Sleep
Deprivation
Google | Confidential and Proprietary

Blue-light from screens causes sleep deprivation; ultimately affects the brain's mental processing

- Technology devices **emit light** at multiple (unnatural) wavelengths **that alter our brain chemistry.**
- **Blue-light reduces cortisol and melatonin,** the hormones responsible for our sleep/wake cycles.
  - This keeps the brain alert
  - Tricks the brain into thinking it needs to be awake
- **Lack of sleep can result in poor executive functioning**
  - Humans have several stages of sleep
  - REM sleep (the deepest one) is most important for synaptic rejuvenation and memory consolidation...basically, the brain's housekeeping mechanisms.
  - Inability to experience REM sleep can cause memory loss, neural circuit damage, and slower mental processing.
  - Results in lower academic performance in students/teens



(National Sleep Foundation, *n.d.*; Rosen, 2016)

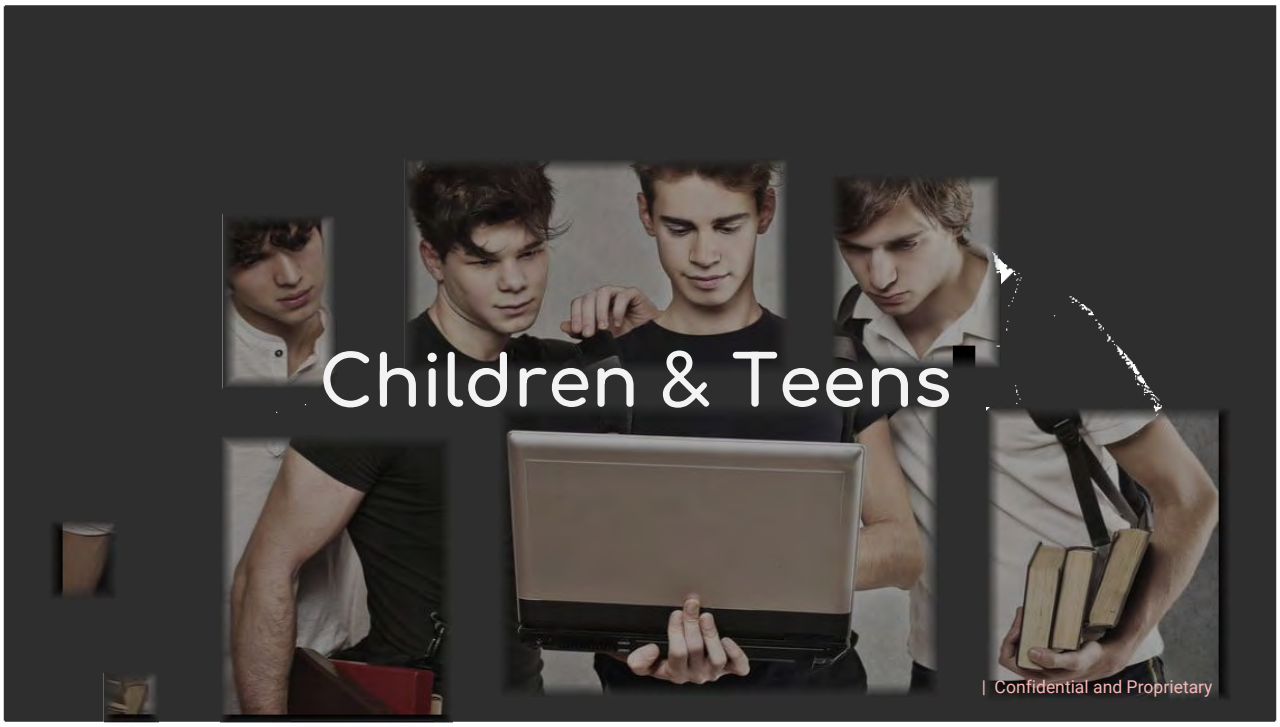
Social Isolation

Users rely on videos & social media for companionship

- **Social isolation is a growing problem due to increased interaction with technology.**
  - Reduction in people's real communication skills
  - There is less of a need to actually speak to people face-to-face
  - People become more comfortable communicating with their heads down, engaging in a "world-in-a-box" than engaging with people around them.
  - Eyes are no longer at "eye-level"...they are constantly down at some device.
  - People are less friendly and do not say hello.
  - Even in face to face interactions, people revert to burying their face in their phone.

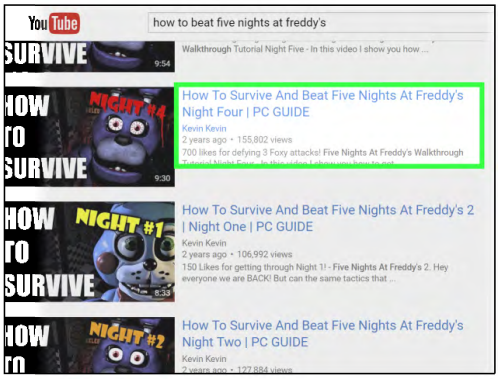
- **Most people are in denial of their increased use of technology**
  - Leads to poor life balance
- **They will not know how to cope with utilizing resources outside of technology.**

(Pew Research Study, 2018)


Children & Teens
| Confidential and Proprietary

Gaming content on YouTube is sought out by inappropriately-aged children

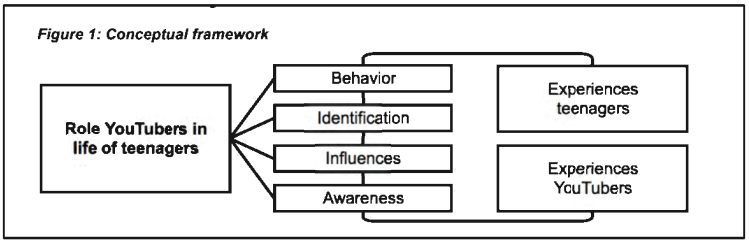
- Research suggests that YouTube's wealthy **gaming content is being watched by** viewers who are **underage** to actually play the game.
    - These "vicarious" players are still exposed to the features in the game that are not age appropriate.
- **Watching this gaming content can become addictive, as well.**
    - If DSM Criteria were applied to watching gaming videos, 1 in 5 teens would be diagnosed with addiction.



(Howard, 2012)

Teens are strongly influenced by YouTube Creators

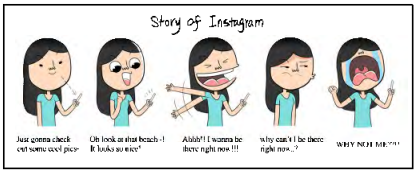
- International research on YouTube Creators revealed that **viewers are heavily influenced by the creators they follow.**
  - Teens copy a creator's fashion, music taste, language, and behaviors
  - This frustrates parents because the creators are not always "child-friendly"
  - Creators do not seem to follow any rules or restrictions to make their content age-appropriate for all of their followers.



(Westenberg, 2012)

Young adults suffer anxiety from “FOMO”

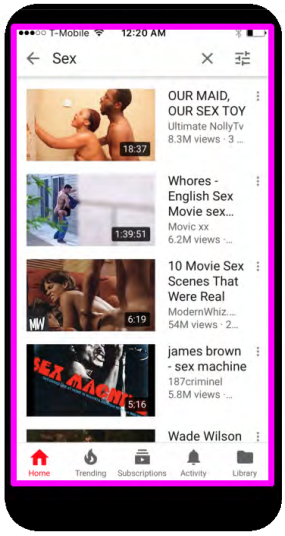
- Younger viewers tend to have the **desire to be informed and aware of everything** going on **in their virtual social life.**
  - Some teens subscribe to channels/creators
  - Some teens interact with creators and other viewers by exchanging comments
- **If their device is temporarily removed or taken away, teens tend to have anxiety from the Fear of Missing Out (FOMO).**
  - Reduces lack of self-control
  - Encourages impulsive behaviors and checking for updates constantly
  - Engagement in media-induced task switching (which is ultimately distraction & procrastination)
  - Addresses *short-term*, affective well-being benefits
  - Especially problematic for self-learning (i.e. online classes)



(Meier, et al., 2016)

Increasing number of children in therapy after watching YT

- Young adults **develop curiosities** about their bodies.
  - Sex becomes a hot topic, and they turn to the internet to get answers.
- **Typing "sex" in the search query on YouTube generates graphic results.**
  - After watching this content, children are found recreating what they saw in the YouTube videos.
  - Assuming they may be suffering from sexual abuse, overwhelmed parents take their children to therapy.
- **Parents are not aware that there is a separate YouTube Kids app.**



(Daniels, 2017)

Key Insights

Key Insights

- Procrastination is the most commonly referenced negative effect of video watching.
- Video watching on the job is becoming a major distraction.
- YouTube “stickiness” is caused by the interactive nature of our platform.
- Videos are initially used for quick mood management, but result in excessive viewing.
- Excessive video watching is related to addiction.
- YouTube users control what they want to watch, which keeps them on the platform longer
- Video-watching encourages a sedentary lifestyle.
- Poor posture & body aches are also a result of excessive video-watching.
- Over-exposure to videos leads to decreased attention spans.
- Easy access to the web reduces critical thinking skills.
- Blue-light from screens causes sleep deprivation; ultimately affects the brain’s mental processing.
- Users rely on videos & social media for companionship; leads to social isolation.
- Gaming content on YouTube is sought out by inappropriately-aged children.
- Teens are strongly influenced by YouTube Creators.
- Young adults suffer anxiety from “FOMO.”
- There is an Increasing number of children in therapy after watching YT

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Thanks! Questions?

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April 2018