Health and Technology

Lecture 10 – COMPSCI111/111G SS 2020

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SIT UP STRAIGHT OR I'LL ERASE YOUR HARD DRIVE.
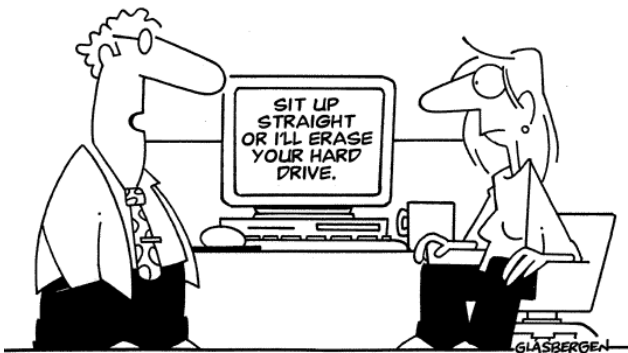
"It's called Ergonomics."

Health and Technology

▶ Technology has a large impact on our lives, not all of it positive.

▶ We will discuss the following types of health issues related to technology:

    ▶ Psychological

    ▶ Physical

Psychological Issues

iDisorders

Distraction [1]

- Digital devices are highly pervasive and are demanding of our attention.
  - "Cognitively penetrating"

- Checking – repeatedly accessing your digital device interrupting your current activity.

- A 2012 study of 777 students at 6 U.S. universities found that :
  - On average a student used a digital device for non-class purposes 11 times during a typical school day.
  - 80% indicated that such behaviour caused them to pay less attention in class and miss instruction.

Instant Gratification [2]

- ▶ The desire to experience pleasure or fulfilment without delay or deferment.
  - ▶ You want it, and you want it now.

- ▶ Always online digital devices have raised the expectation for immediate gratification.
  - ▶ E.g. expecting immediate responses to social media posts or texts.

- ▶ Has resulted in:
  - ▶ Increased impatience
  - ▶ Unrealistic expectations
  - ▶ "checking"

Narcissism [3]

- Personality trait characterized by a grandiose sense of self-importance.
  - Engage in self-promotion, vanity and superficial relationships.

- Younger people show a stronger urge to report their activities and believe their social media audience care about them.
  - A 2009 study of 16000 college students in the US found that they scored substantially higher on the Narcissism Personality Inventory than their cohort 20 years ago.

- Studies have suggested social media exacerbates and even encourages narcissism.
  - Users may tailor their profile pictures, status updates, biographies and even lists of friends in order to appear more attractive.

Mood Disorders [3]

- Extensive evidence documenting a relationship between depression and technology.
  - Excessive texting, viewing video clips, video gaming, chatting etc.

- Depression may be transmittable through technological interaction.
  - Consumption of depressing media, particularly movies and music can induce a negative affect.
  - "emotional contagion"

Deficits in Social Skills [4]

- Increased interaction with technology has led to a reduction in human interaction.
  - Face-to-face communication skills are negatively affected.

- Visual cues are an important part of face-to-face communication.
  - Includes facial expression, eye contact, tone of voice, posture, and spatial distance.
  - Need to be able to modify one's own behaviour in response to the reactions of others.

- A 2014 study of 105 U.S. children was carried out.
  - 51 children in the test group did not use digital devices for 5 days – only face-to-face communication.
  - 54 children in the control group continued to use their digital devices.
  - Test group recognition of nonverbal emotional cues was significantly better than that of the control group.

Physical Issues

Computer Vision Syndrome [5]

▶ Results from focusing eyes on a computer or other display device for long, uninterrupted periods of time.

▶ Symptoms of CVS include:
   ▶ Dry eyes
   ▶ Blurred/double vision
   ▶ Eyestrain
   ▶ Red/irritated eyes

▶ Treatment/Prevention:
   ▶ Proper lighting within computer workstation area
   ▶ Appropriated screen distance and position
   ▶ Work breaks
   ▶ Lubricating eye drops

Hearing Loss [6]

▶ Listening to media through headphones or earbuds for prolonged periods of time at high volume can cause permanent hearing loss.

▶ A 2005–2006 study reported that 19.5% of American adolescents aged 12 to 19 suffered from hearing loss.
  ▶ An increase of 33% from that reported in 1988–1994.
  ▶ Some of this increase may be attributable to headphone/earbud usage.

▶ Prevention:
  ▶ Lower volume. If other people can hear the music you are listening to it is most probably too loud.
  ▶ Limit exposure. Moderate noise on a regular basis can lead to hearing loss.

Occupational Overuse Syndrome [7, 8]

▶ Also referred to as Repetitive Strain Injury (RSI).

▶ Umbrella term for range of conditions characterized by:
  ▶ Muscle discomfort
  ▶ Aches and pains
  ▶ Muscle tightness and spasms
  ▶ Numbness and tingling

▶ Pain may eventually become constant and associated with loss of muscle strength and sleep disturbances.

▶ Factors that can lead to OOS developing include:
  ▶ Repetitive movement – e.g. typing
  ▶ Awkward postures – e.g. sitting at a desk
  ▶ Poor ergonomics
  ▶ Psychosocial factors – excessive workload, impending deadlines
  ▶ Poor work practices - e.g. poor time management

Occupational Overuse Syndrome [7, 8]

▶ There are a number of steps that can be taken to prevent OOS.

▶ From a workplace perspective:
  ▶ Design equipment and tasks with people in mind e.g. ergonomic workstations.
  ▶ Pay attention to work environment – e.g. lighting.
  ▶ Train and educate all staff.

▶ From a personal perspective:
  ▶ Stop activity when discomfort is felt
  ▶ Maintain correct posture
  ▶ Take regular breaks
  ▶ Avoid prolonged, repetitive movement or activity
  ▶ Manage stress levels
  ▶ Educate yourself about OOS prevention

General Solutions for Healthy Use of Technology

► Take breaks both large and small.

► Moderate your social media presence.
   ► Try cutting down the number of posts or status updates you make each day.
   ► Are you posting for narcissistic reasons or with communication as a goal?

► Give your work or entertainment space an ergonomic makeover.
   ► Pay attention to lighting, chair, display position etc.

► Maintain a healthy lifestyle.
   ► Appropriate diet
   ► Exercise
   ► No smoking

Summary

▶ Technology can have a negative effect on your health.

▶ Psychological Issues:
  - ▶ Distraction
  - ▶ Instant gratification
  - ▶ Narcissism
  - ▶ Mood disorders
  - ▶ Deficits in social skills

▶ Physical issues
  - ▶ Computer Vision Syndrome (CVS)
  - ▶ Hearing loss
  - ▶ Occupational Overuse Syndrome (OOS)

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