

Information and Society-E2

- Information Education 2-

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IMPACTS OF INFORMATION SOCIETY ON LEARNERS

21st Century Learner

- What are the current students like when compared to the students in the past (e.g., 1970s-1990s)?
- What are the common characteristics of 21st century learners?

Students Now and in Near Past

Baby boomers

(born between 1946 and 1964)

- Typewriters
- Memos
- TV

Gen X

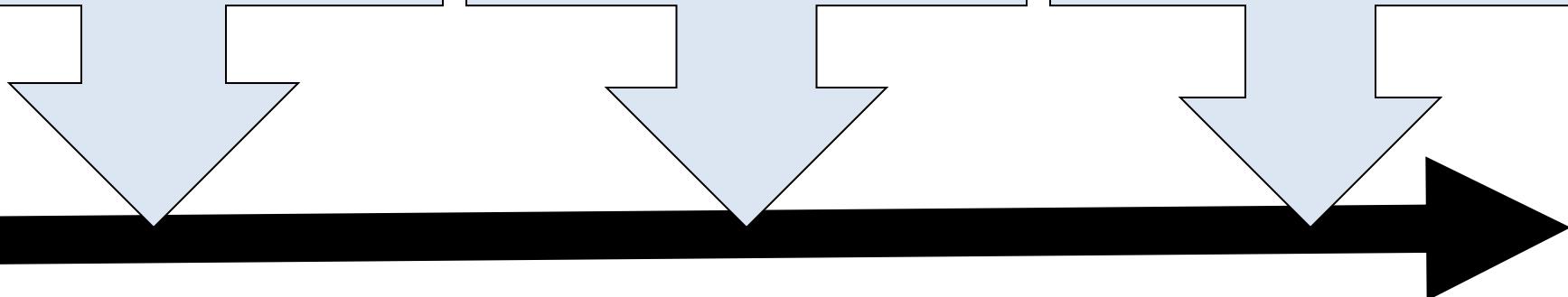
(born between the 60s and 80s)

- Video games
- Computers
- Email

Net Gen, Gen Z

(born in and after the 90s)

- Internet
- Smartphones, tablets
- SNS
- Text messaging



Time

Net Generation

- Use instant message: 76%
- Log on an average 35 hours a week
- Do schoolwork while instant messaging: 75%
- Own a blog: 28%
- Read a blog: 44%
- Get their news primarily from Web sites: 34%
- Have a Facebook account: 69%

Learner's in the Past

- Typically, **one way** learning from a teacher to students
 - Some interactivity
- Learning mainly based on **text**
- Main “technology”: pen, paper, book, black board, etc.
- Self-learning based on typically “scarce” books (scarcity of information sources)

Today's Learners

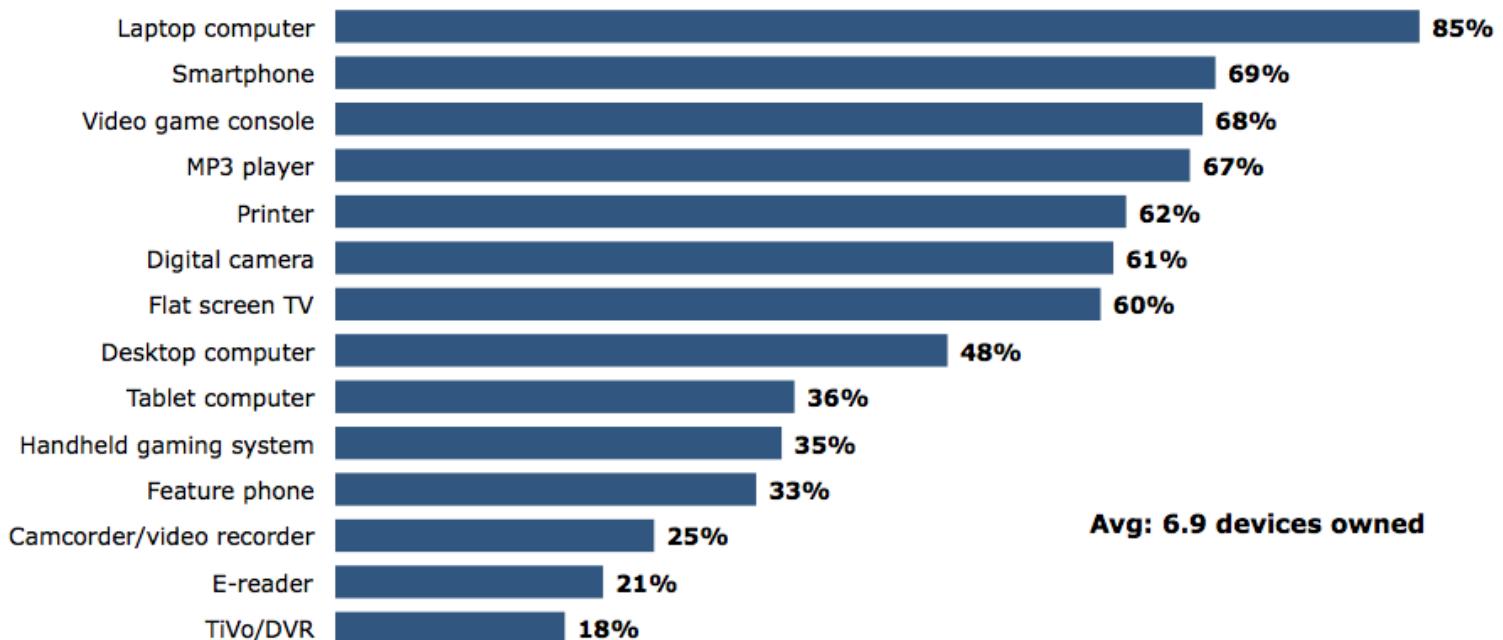
- Today's learners are:
 - Digitally literate, Mobile, Always on, Experiential, Social (stay connected)
- They tend to:
 - Search for **interactivity**, Read **visual** images, Have strong **visual-spatial skills**, Do **parallel** processing and **inductive** discovery, Have **fast response time**
- Learning preferences
 - Teams, peer-to-peer
 - Engagement & experience
 - Visual & kinesthetic, Structure



Current Students are Digital Natives

Tech Devices Owned by College Students

%
June 2013



MC MARKETINGCHARTS.COM

Source: re:fuel

Based on opinions of 1,528 college students between the ages of 18-34 in USA

"Digital Natives, Digital Immigrants"
(Marc Prensky, 2001)

Net Generation and Technology

- Net Generation is characterized by **intuitive use of technology**
- Children are surrounded by computers at school and at home from early years
 - They run their social lives through mobile devices, immerse themselves in video games
- The Net Generation is **digital native** and **self-teaching**

Cut-and-Paste Culture

- Information is nowadays easily available from the Internet, especially from sites like Wikipedia
- Students these days **quickly shift attention from one project to another** and **put a high priority on speed**
- They may **lack depth in their research and critical skills**
 - E.g., tendency for collecting information from the first page in Google search results without examining it and whether its Web site is credible source
- Net Generation college students are **strong visual learners** and **weaker textual learners.**

Concerns

- Often have short attention span
- Tend to lack text literacy
- Tend to lack reflection
- Tend to lack identification of source quality
- They may not know how to find the information
- ...

INFORMATION LITERACY

(情報リテラシー)

Traditional View on Literacy

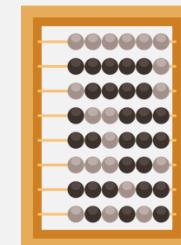
Reading



Writing



Abacus



Literacy in the 21st Century

“...Literacy in the 21st Century will mean the ability to find information, decode it, process it, critically evaluate it, organize it into personal digital libraries, and find meaningful ways to share it with others. Information is raw material — students will need to learn to build with it...”

Thomas Friedman. *The World Is Flat: A Brief History of the Twenty-First Century*, Farrar, Straus and Giroux, 2005

“...Adolescents entering the adult world in the 21st century will read and write more than at any other time in human history. They will need advanced levels of literacy to perform their jobs, run their households, act as citizens, and conduct their personal lives. They will need literacy to cope with the flood of information they will find everywhere they turn. In a complex and sometimes even dangerous world, their ability to read will be crucial...”

Moore, David et al. *Adolescent Literacy: A Position Statement*. The Commission on Adolescent Literacy of the International Reading Association, March 18, 1999, p. 3.

http://www.reading.org/downloads/positions/ps1036_adolescent.pdf

Information Literacy Definitions

- “The set of skills needed to **find, retrieve, analyze, and use information.**” (ACRL, 2006)
- “To be information literate, a person must be **able to recognize when information is needed** and have the **ability to locate, evaluate, and use effectively the needed information.**” (American Library Association, 1989)
- Please also pay attention that the definitions of information literacy in **USA and Japan are slightly different.** You can compare them by yourself by referring to the Wikipedia pages.
 - https://en.wikipedia.org/wiki/Information_literacy
 - <https://ja.wikipedia.org/wiki/情報リテラシー>

An Information Literate Individual

- 1) Determine the **extent** of information needed
- 2) Access the needed information **effectively** and **efficiently**
- 3-1) Evaluate information and its **sources critically**
- 3-2) **Incorporate** selected information into one's knowledge base
- 4) Use information effectively to accomplish a **specific purpose**
- 5) Understand the **economic**, **legal**, and **social issues** surrounding the use of information, and access and use information **ethically** and **legally**.

Information Literacy Competency Standards for Higher Education

American Library Association, 2000

<http://www.ala.org/acrl/sites/ala.org.acrl/files/content/standards/standards.pdf>

Standard One

- The information literate student **determines the nature and extent of the information needed.**
- *Performance Indicators:*
 1. The information literate student defines and articulates the need for information.
 2. The information literate student identifies a variety of types and formats of potential sources for information.
 3. The information literate student considers the costs and benefits of acquiring the needed information.
 4. The information literate student reevaluates the nature and extent of the information need.

Standard Two

- The information literate student **accesses the needed information effectively and efficiently.**
- *Performance Indicators:*
 1. The information literate student **selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.**
 2. The information literate student **constructs and implements effectively designed search strategies.**
 3. The information literate student **retrieves information online or in person using a variety of methods.**
 4. The information literate student **refines the search strategy if necessary.**
 5. The information literate student **extracts, records, and manages the information and its sources.**

Standard Three-1

- The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
- *Performance Indicators:*
 1. The information literate student summarizes the main ideas to be extracted from the information gathered.
 2. The information literate student articulates and applies initial criteria for evaluating both the information and its sources.
 3. The information literate student synthesizes main ideas to construct new concepts.

Standard Three-2

- The information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information.
- The information literate student determines whether the new knowledge has an impact on the individual's value system and takes steps to reconcile differences.
- The information literate student validates understanding and interpretation of the information through discourse with other individuals, subject-area experts, and/or practitioners.
- The information literate student determines whether the initial query should be revised.

Standard Four

- The information literate student, individually or as a member of a group, **uses information effectively to accomplish a specific purpose.**
- *Performance Indicators:*
 1. The information literate student **applies new and prior information to the planning and creation of a particular product or performance.**
 2. The information literate student **revises the development process for the product or performance.**
 3. The information literate student **communicates the product or performance effectively to others.**

Standard Five

- The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.
- *Performance Indicators:*
 1. The information literate student understands many of the ethical, legal and socio-economic issues surrounding information and information technology.
 2. The information literate student follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources.
 3. The information literate student acknowledges the use of information sources in communicating the product or performance.

MEDIA LITERACY

Impacts of Information on Literacy

Computer literacy

- Ability to **operate** and **use** a computer

Media literacy

- Ability to correctly understand the **characteristics** of media, and **select** and **use** media and information suitable for one's purpose

Information literacy

- Ability to **access** and to **properly use** information according to one's need

Media Literacy

- The US-based National Association for Media Literacy Education defines it as a series of communication competencies with the ability to **access, analyze, evaluate, and communicate** in a variety of forms which can be print or non-print messages.
- They find that media literacy **allows people to be critical thinkers and creative** in many messages like image, language, and sound.

Important Skills for Media Literacy

- There are **four important skills** that help the viewer or reader understand the meaning of media literacy:
 1. **Accessing** media
 2. **Analyzing** content
 3. Being able to **evaluate** messages
 4. Being able to **create** media for self-expression and communication.

Critical Thinking Example: Deconstructing Media Messages

- Deconstructing media messages as important analytical skill
 - “Taking apart” media messages to understand how they work, including any hidden meanings
 - Understanding who created the message, who is intended receiver, how the media maker put together the message using words, images, sounds, design, and other elements as well as what are the point of view of media makers, their values and biases

Critical Thinking Example: Deconstructing Media Messages

- Key concepts for deconstructing media messages
 - **Source.** The creator could be an individual writer, photographer, blogger, institution, company, etc. Sometimes the client ordering the message construction is the actual “creator”
 - **Audience.** Many media messages are designed to reach specific groups of people (distinguished by age, gender, class, interests, and other factors – called the “target audience.”)
 - **Text.** The “text” of media are written or spoken words, pictures, graphics, moving images, sounds, and the arrangement or sequence of all of these elements.
 - **Subtext.** The “subtext” is an individual interpretation of a media message. It is the meaning the receiver creates from the text in her mind. Each person creates own subtext (interpretation) based on their previous experiences, knowledge, opinions, attitudes, and values
 - **Persuasion techniques.** Media messages use a number of techniques to try to persuade us to believe or do something. Spotting the used techniques helps to avoid being persuaded and to think for ourselves
 - **Point of view.** Often, only part of the story is told from the author point of view. Deconstructing a media message can expose the values and biases of the media maker

Manipulation of Images in News Articles

Magazine used altered image as cover photo

- Cover photo: President Obama alone looking at the sea
- Original photo: Charlotte Randolph (local parish president) and Thad Allen (United States Coast Guard admiral) were standing beside him.

The screenshot shows a web browser window with the New York Times Media Decoder page. The URL is http://mediadecoder.blogs.nytimes.com/2010/07/05/on-the-economists-cover-only-a-part-of-the-picture/?_r=0. The page title is "Media & Advertising". The main headline is "On The Economist's Cover, Only a Part of the Picture". Below it, a sub-headline reads "The damage beyond the spill". A caption states: "President Obama on the magazine cover and in the original photograph with Charlotte Randolph, president of a Louisiana parish, and Adm. Thad W. Allen of the Coast Guard." The text continues: "It was the ideal metaphor for a politically troubled president. There was President Obama on the cover of the June 19 issue of The Economist, standing alone on a Louisiana beach, head down, looking forlornly at the ground. The problem was, he was not actually alone. The photograph was just edited to make it look that way." At the bottom, it says: "The unaltered image, shot on May 28 by a Reuters photographer, Larry Downing, shows Adm. Thad W. Allen of the Coast Guard and Charlotte Randolph, a local parish president, standing alongside the president. But in the image that appeared on The Economist's cover, Admiral Allen and Ms. Randolph had been scrubbed out, replaced by the blue water of the Gulf of Mexico."



From New York Times Website

http://mediadecoder.blogs.nytimes.com/2010/07/05/on-the-economists-cover-only-a-part-of-the-picture/?_r=0

Fabrication of Pictures

Iran's missile-launching test

- On July 9, 2008, the Army of the Guardians of the Islamic Revolution in Iran carried out multiple missile-launching tests
- The pictures used in many newspapers and online versions were composite photographs.

The screenshot shows a BBC News page from July 10, 2008. The main headline is "Iran 'faked missile test image'". The story discusses accusations that Iran altered a photo of a missile test to exaggerate its military capabilities. It mentions that four missiles appeared to take off from a desert launch pad in one image, while only three were actually fired. The BBC notes that the fourth missile was added using elements from the smoke and dust clouds of the other successfully launched missiles. A sidebar on the right lists "IRAN NUCLEAR CRISIS" stories and "ANALYSIS AND BACKGROUND" on Iran options. The BBC logo and navigation menu are visible at the top.



From BBC News Website

http://news.bbc.co.uk/2/hi/middle_east/7500917.stm

Message Deconstruction Questions

1. Whose message is this? Who created or ordered to create it? Why? Who has control over the content?
2. What is the target audience of the message?
3. What are the clues (words, images, sounds, etc.)?
4. What tools of persuasion are used?
5. What part of the story is not being told?
6. ...

How false news can spread



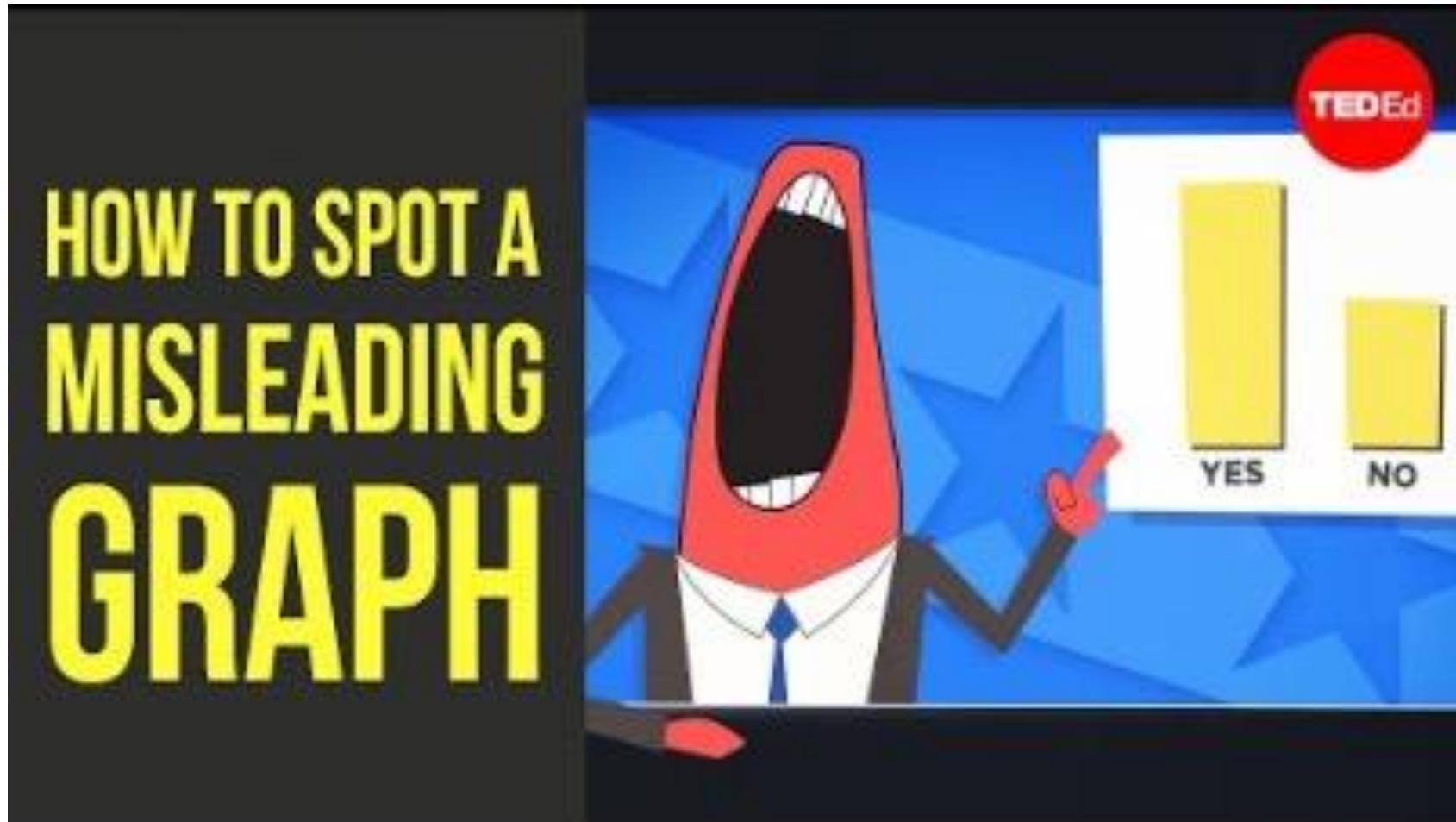
How to choose your news



HOW TO CHOOSE YOUR NEWS

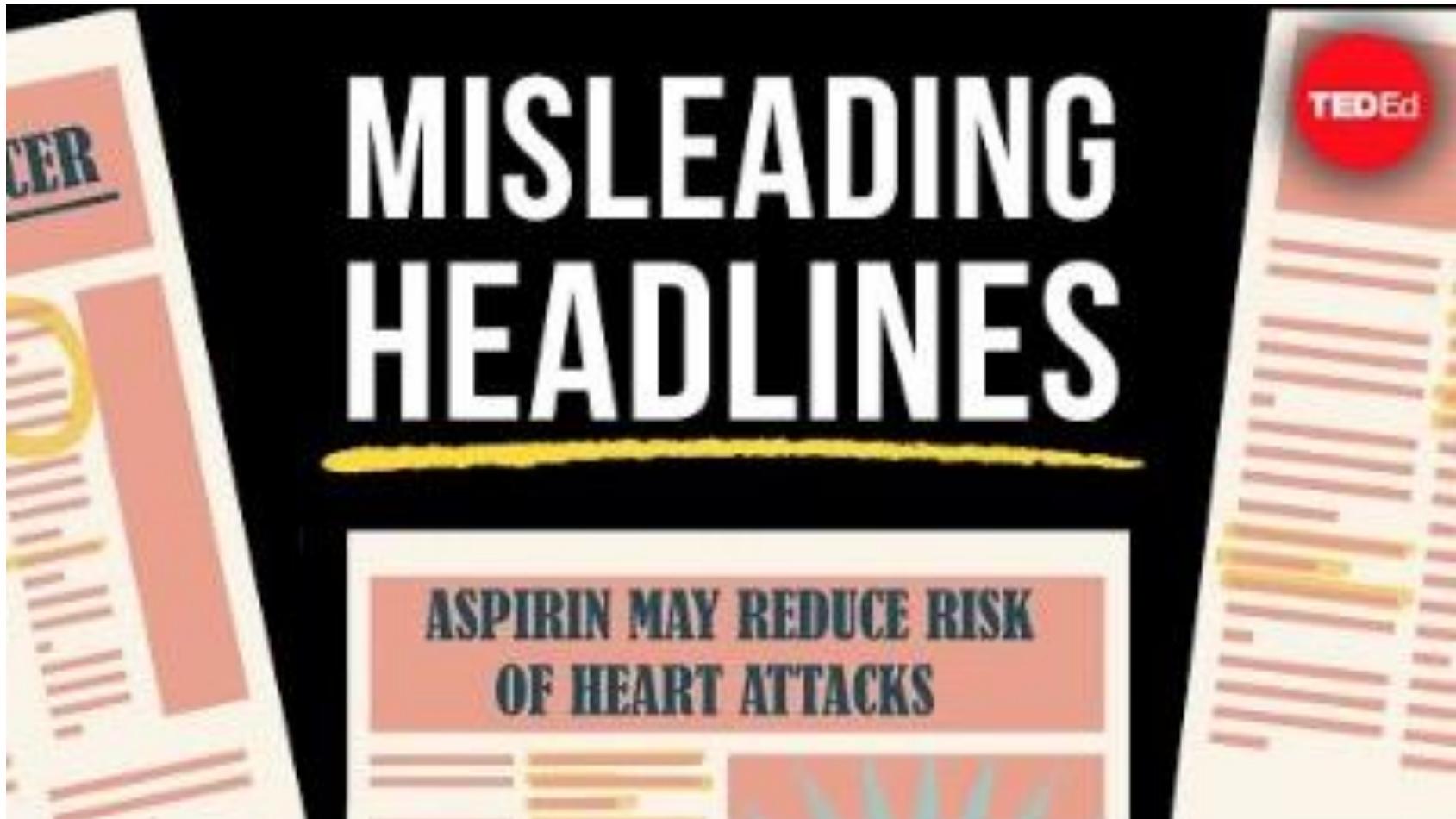


How to spot a misleading graph



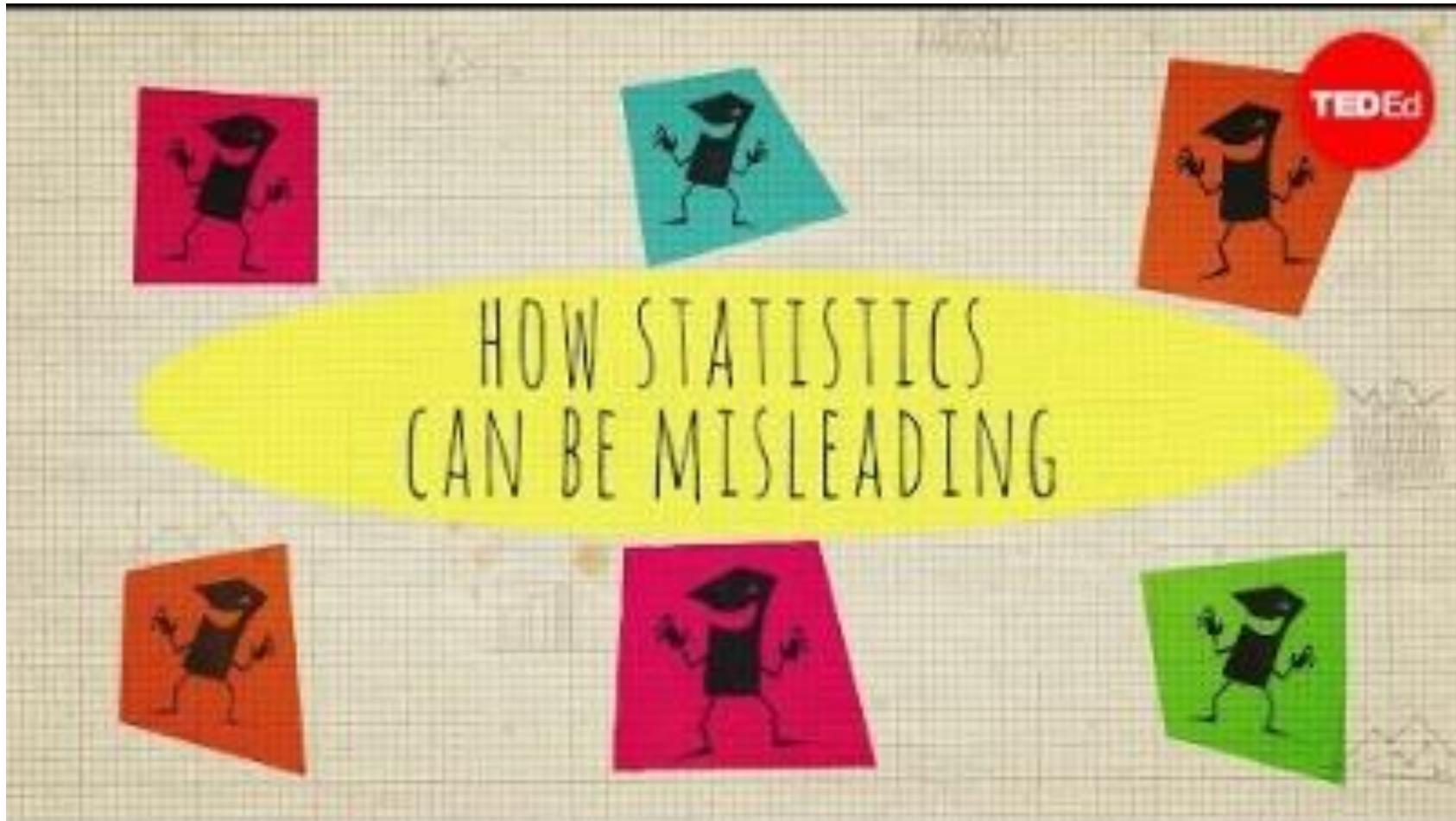
<https://ed.ted.com/lessons/how-to-spot-a-misleading-graph-lea-gaslowitz>

Can you spot the problem with these headlines?



<https://ed.ted.com/lessons/can-you-spot-the-problem-with-these-headlines-level-1-jeff-leek-and-lucy-mcgowan>

How statistics can be misleading



<https://ed.ted.com/lessons/how-statistics-can-be-misleading-mark-liddell>

Example: 600 people could die if a certain disease would become epidemic

Take countermeasure A

Take countermeasure B

Example: 600 people could die if a certain disease would become epidemic

Take countermeasure A

- 200 people will be saved.

Take countermeasure B

Example: 600 people could die if a certain disease would become epidemic

Take countermeasure A

- 200 people will be saved.

Take countermeasure B

- 600 people will be saved at $\frac{1}{3}$ probability, and nobody will be saved at $\frac{2}{3}$ probability.

Example: 600 people could die if a certain disease would become epidemic

Take countermeasure A

- 400 people will die.

Take countermeasure B

- Nobody will die at $\frac{1}{3}$ probability, and 600 will die at $\frac{2}{3}$ probability.

Example: 600 people could die if a certain disease would become epidemic

Take countermeasure A

- 200 people will be saved.
- 400 people will die.

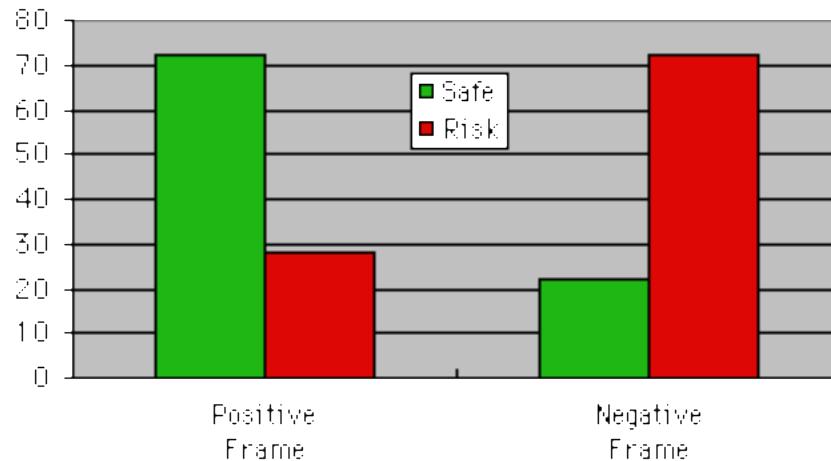
Take countermeasure B

- 600 people will be saved at $\frac{1}{3}$ probability, and nobody will be saved at $\frac{2}{3}$ probability.
- Nobody will die at $\frac{1}{3}$ probability, and 600 will die at $\frac{2}{3}$ probability.

Framing Effect

Affects risk evaluation

- Survival rate vs. death rate
- Probability vs. expected value



Framing can powerfully influence the way a problem is perceived, which in turn can lead to the favoring of radically different solutions

Hone Your Media Literacy Skills

- TED-Ed YouTube Playlist on Media Literacy

Thank you

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