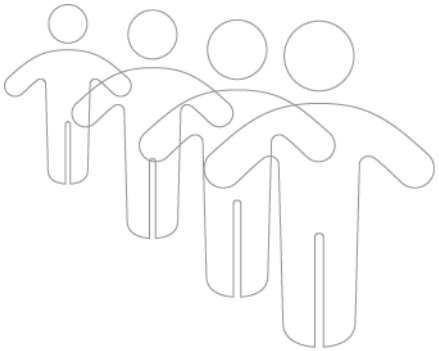

Designing for People!

Human Factors for Technical Communicators

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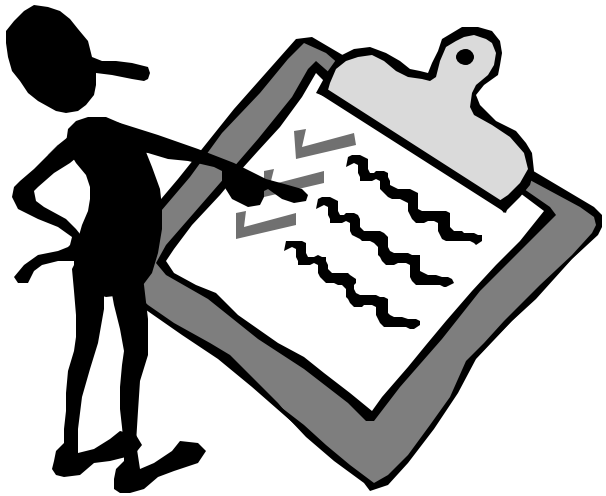
List one

- I'll read 20 words at approx one word per second
- I'll precede each word with a hint to help you remember it
- Don't write anything until I tell you to



Discussion topics

- What is/are human factors?
- Why do technical communicators care?
- Important human factors
- How human factors affect information architecture and design
- Resources: Learning more

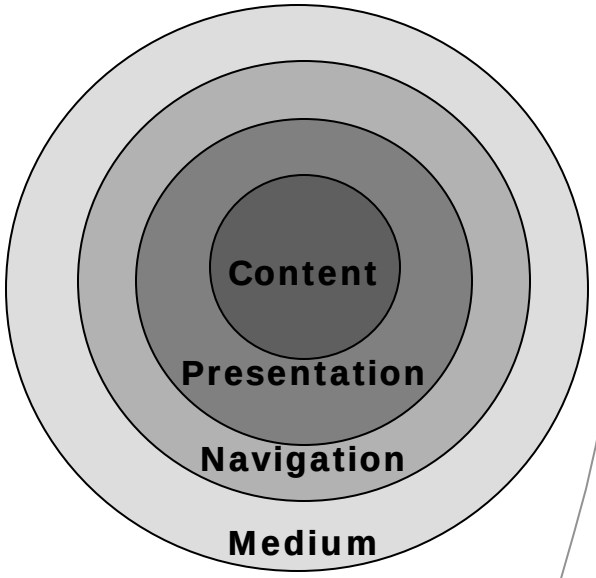
Human factors

(Marlana Coe, *Human Factors for Technical Communicators*)

- Designing and developing products for people
  - Engineering (ergonomics)
  - Cognitive psychology: The study of human behavior in light of the internal, mental processes that drive it
    - Perception
    - Memory
    - Approach to problem solving
    - Learning styles
- A field of study, an industry, a career
- A baseline from which technical communicators can better
  - Understand user analysis information we collect
  - Design to leverage users' cognitive processes
  - Understand validation/usability testing data

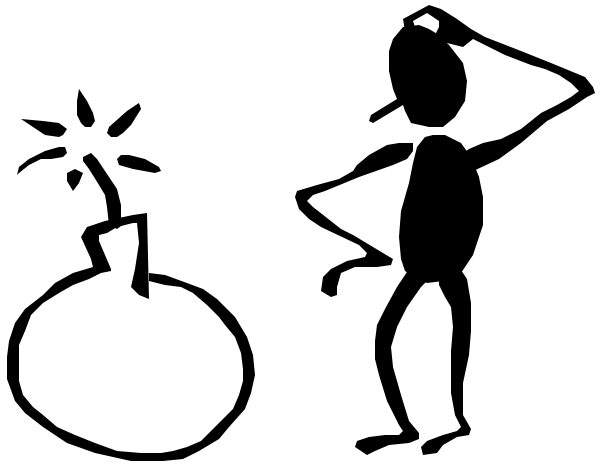
Why we care

- Users receive our information through layers of meaning—both intended and perceived
  - Content
  - Presentation
  - Navigation
  - Medium
- *We* design these layers
- Users don't enter our world; we (our products and information) enter theirs
- Users (humans) interpret our information through various filters, influenced by human nature



What affects perception of and reaction to products and information?

- Experience
- Expectation
- Habit
- Ability
- Goals
- Motivation
- Memory capacity
- Reading strategy
- Learning style
- Approach to problem solving

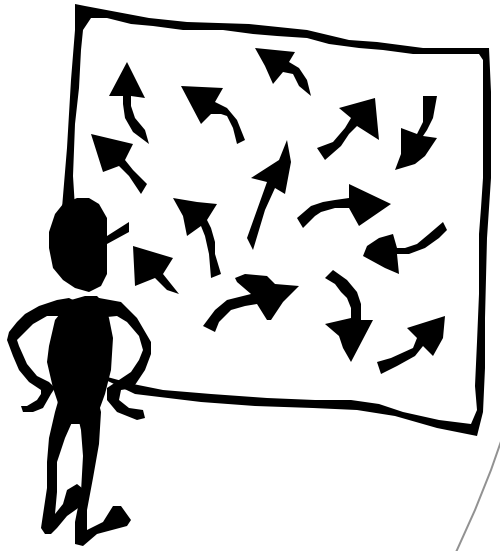


Important cognitive (human) factors affecting design

- Sensation and perception
- Learning
- Problem solving
- Memory

Sensation and perception: The basis for everything

- A combination of physical and psychological processes
- Sensation: Taking in data—what you see, hear, etc., with your physical senses
- Perception: Interpreting, storing, retrieving, and applying that data



Learning: Changing users' behavior

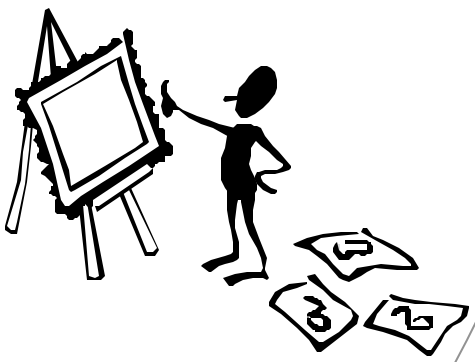
- A permanent change in a users' behavior
- Based on the result of an experience
- An important part of what technical communicators do

Memory

- A consequence of and assistant to learning
- The great organizer
- A storage place
- The data stored
- A means of moving data into and out of storage

Problem solving: Users rely on our information to solve problems

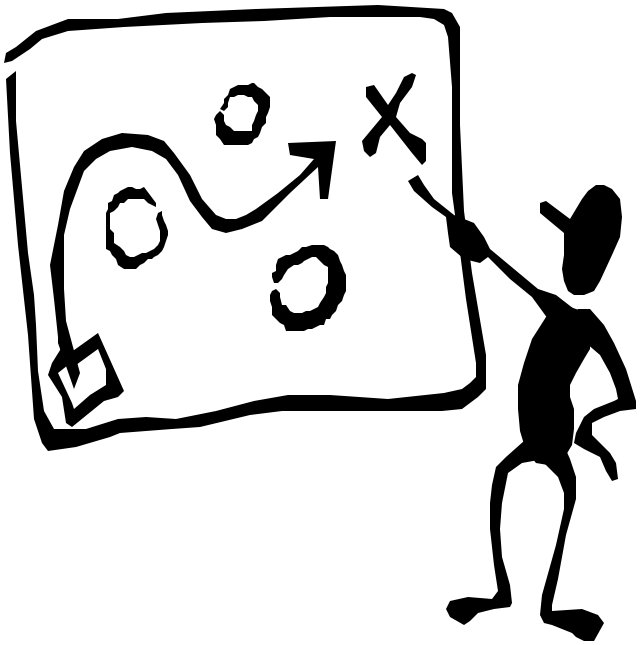
- Developing a strategy to reach a goal we've never before successfully reached
- Responding to a situation for which we have no well-established response
- When users read your information, they go through a four-step, problem-solving process
  - Conceptualizing
  - Reasoning
  - Selecting a strategy
  - Avoiding obstacles
- Or do they? Perhaps they only "satisfice"



Today, we're going to focus on…

- Memory

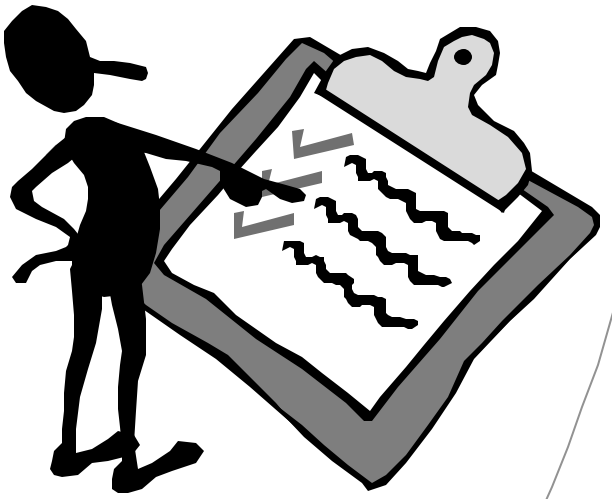
- Problem solving



How good is your memory? ☺

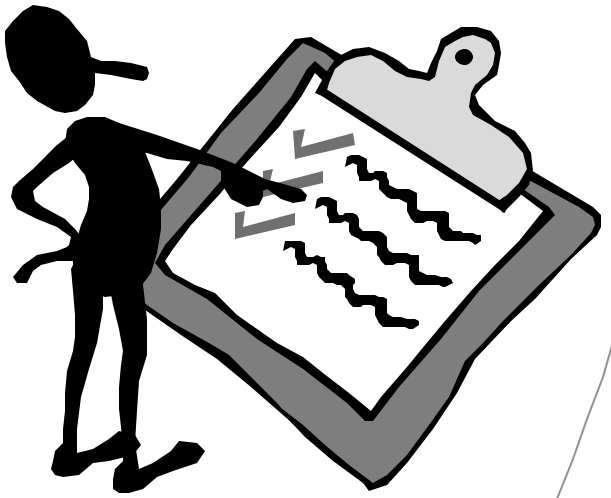
List two

- I'll read 20 words at approximately one word per second
- When I finish, write down as many words as possible in any order



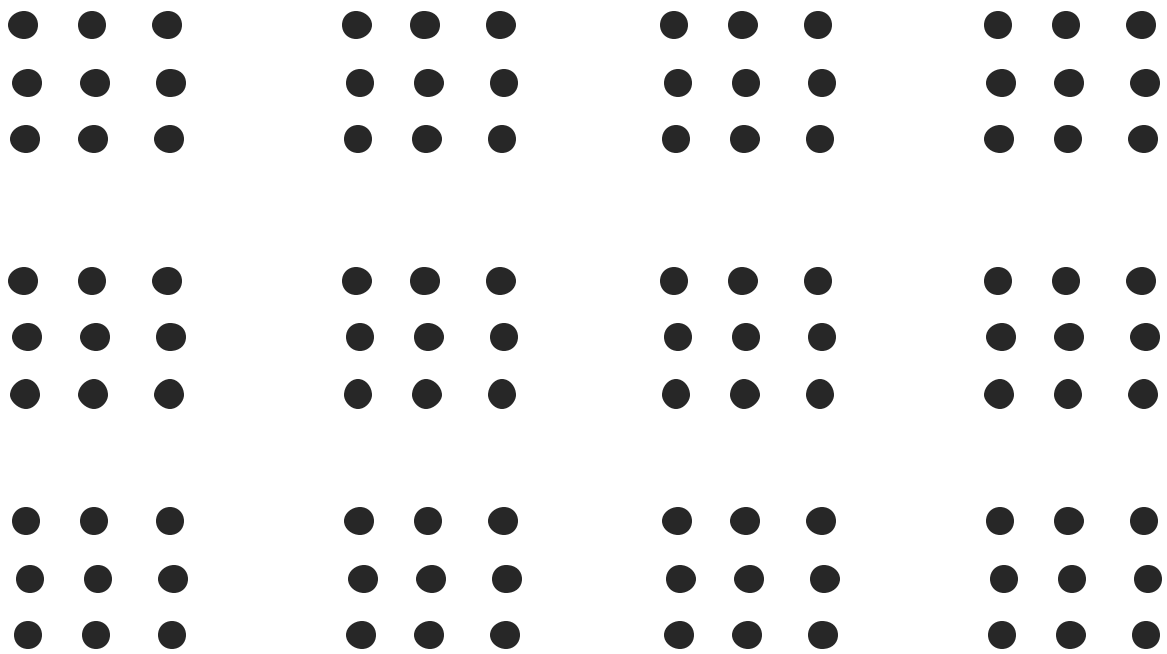
List three

- I'll read 20 words at approx one word per section
- When I finish, write down as many words as possible in any order



How do you approach problem solving?

Connect all nine dots, using four straight lines, but without lifting your pencil from the page. If at first you don't succeed, try, try again. ☺



Answer the following questions

- If a barometer standing in the sun is 24 inches tall and casts a 12-inch shadow, how tall is the building next to it, if the shadow of the building is 97.5 feet long?

  _____ feet tall
- How many cubic feet of dirt can be removed from a hole 25 feet long by 10 feet wide by 5 feet deep?

  _____ cubic feet
- What two American coins total exactly 60 cents, but one of them is not a 10-cent piece?

  _____

The Basin, slide 1 of 3
Example problem

- Assume: You have a large supply of water and an empty basin. Using only three containers, of sizes to be specified, you are to end up with a specific amount of water in the basin.
- Example data:
  - Container A will hold 18 oz.
  - Container B will hold 43 oz.
  - Container C will hold 10 oz.
- Goal: 5 oz. of water in the basin

The Basin, slide 2 of 3
Example solution

- Fill the 43-oz. container (B)
- Take out 18 oz., using container A
- Take out 10 oz. twice, using container C
- Pour 5 oz. remaining in container B into basin

- Example formula: b – a – 2c

The Basin, slide 3 of 3

Solve the container problem with the following data sets

Problem	A	B	C	To Get	Solution?
1	21	127	3	100	
2	14	163	25	99	
3	9	42	6	21	
4	20	59	4	31	
5	23	49	3	20	
6	15	39	3	18	
7	28	76	3	25	
8	18	48	4	22	

Complete the following series

- 2 4 6 8 ____
- 2 4 8 16 ____

What rules did you follow?

- O T T F ____

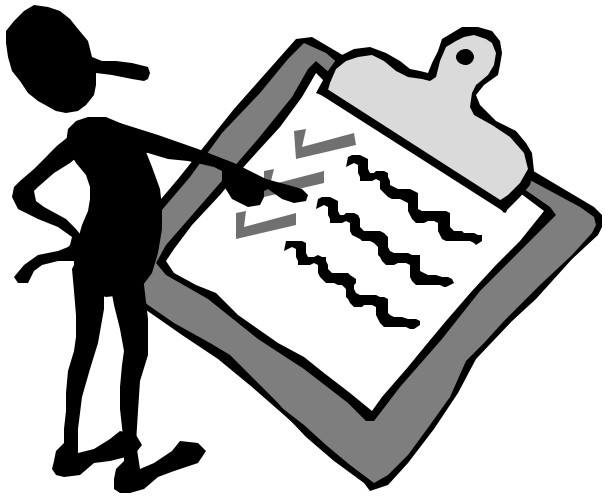
Don't tell the rule…

What our own problem-solving process can teach us

- Users don't make optimal choices; they satisfice (examine the first solution that comes to mind, and if there are no glaring problems, go for it)
- Users don't figure things out; they muddle through (the Braille method)
- Don't make users think! (Steve Krug, Don't Make Me Think!)
  - Eliminate the question marks
  - Answer common questions
    - Where am I?
    - Where should I begin?
    - Where did they put _____?
    - What are the most important things?
    - Why did they call it that?
- Don't make users read…let them
  - Skim
  - Scan

List one, revisited

- I'll read the list of hints from the first list of words I read to you
- I'll give you about 10 seconds after each hint to write the word associated with the hint



What our own memory limitations can teach us

- Information architecture is critical: Organize and categorize information for users
- Informational labels are critical: Make the navigation and next actions evident
- Informational context is critical: Provide a paradigm, model…something for users to hang their learning on
- Inconsistency in information is evil: Given the wrong name, context, etc., users will make the wrong decision and/or get confused, so be consistent
- Missing information is evil: Given a lack of information, context, etc., users will make
  stuff up

Human factors resources

- Krug, Steve. *Don't Make Me Think*
- Coe, Marlana. *Human Factors for Technical Communicators*
- Norman, Donald. *The Psychology of Everyday Things*

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