Using Colors and Text in Hypermedia presentations

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Problems

- various problems in projected HM pres.
  - easily distiguishable colors on the screen
  - but not easily recognizable as different when projected
- guidelines for developers to avoid common problems associated with the projection of HM materials

Monitor vs. Projected graphic design

- easily DISCERNIBLE COLORS on the computer monitor are difficult or impossible to distinguish when projected
- SHADOWS for a 3D look
  - the two blur together when projected and the shadow disappears
- bg color to add ILLUMINATION to the room
- projected image must CUE the viewer when the content changes
- character size and font (thickness, low contrast)

Do not use a lot of graphics

- colors and other graphics should ENHANCE the presentation
- but people overdo the graphics and miss the content

Character types and sizes

- text is still the most used element in a hypermedia presentation
- if legible, text can support oral presentation
- visible text provides redundancy by involving senses other than hearing
- text assists the students in keeping attention on the topic at hand

Character type

- aspect of the use of different fonts
- do not use several font types on one screen
- multiple fonts can confuse viewers and seldom improve the aesthetics of the presentation
- two fonts are usually quite sufficient
- one font for the header and one for the text

Times Roman font

- Times Roman commonly used for printed materials and computer displays
- but when projected, hard to read

Why?

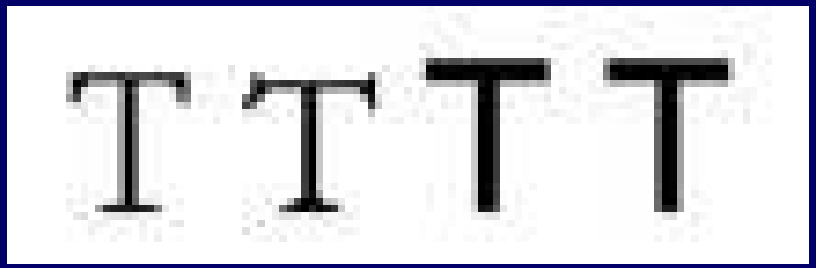
- the lines making up the characters differ in thickness
- e.g. the letter "**B**" and the number "**8**" are hard to differentiate under the low-contrast conditions

B8B8, B8B8, B8B8, B8B8, B8B8 1lI, 1lI, 1lI, 1lI, 1lI,

rn m, rn m, rn m, rn m, rn m,

Serif versus Sans Serif

- serif is the small tail or flag added to the ends of letter strokes
  - serif fonts with, sans serif fonts without them
  - Serif fonts traditionally graced the printed page, as the tags supposedly helped guide the reader's eye along the line of text
  - headlines traditionally used sans serif fonts to stand out



Character Size

- character size corresponds to the legibility of text to be read from a distance
- the most common problems
  - too small text
  - too much text on the screen
- choose the appropriate letter size
- limit the amount of text on a screen
- present just one idea per screen

Size 28, Size 24, size 20, Size 18, Size 16

Color Principles and Guidelines

- colors improve performace in recall, search-and-locate, retention, and decision/judgement tasks
- color improved the comprehension of instructional materials if used meaningfully
- color can cue actions before they occur:
  - highlight warnings,
  - facilitate discrimination among objects,
  - emphasize logical relationships between objects,
  - increase interest in the topic presented,
  - create more professional final product

Color Principles and Guidelines 2

- certain colors, like pastels, are difficult or impossible to distinguish when projected
- too many colors can make the final product difficult to read

Specific Guidelines to Help Designers in Choosing Colors

- use colors to cue viewers to coming changes
- use only a few colors
- be consistent with your use of colors
- use meaningful colors
- use discriminable colors to separate ideas

Use Colors to Cue Viewers to Coming Changes

- a change in color prior to the start of some multimedia event can provide an important cue in presentation
- such as an audio piece or video clip

Use Only a few Colors

- too many colors on a single display obscure the content
- for the most effective presentation, use no more than three or four big regions of color on a single screen
  - choose one color as the main color
  - a second color related to the first
  - choose colors near each other on the color wheel (violet and blue, red and orange, yellow and green)
  - the third and fourth colors only for text or cues

Use Only a few Colors 2

Too many colors in the text

Too many colors in the text

Too many colors in the text

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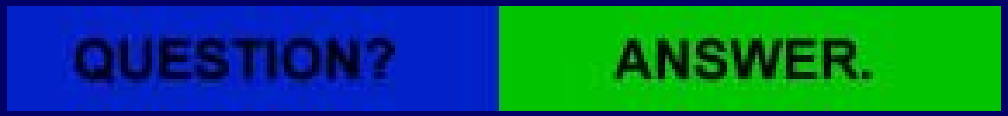
Be Consistent with Use of Colors

- use similar background colors throughout the presentation
- change background colors only when the meaning of the display changes
- use the same colors for similar ideas

Be Consistent with Use of Colors 2

- blue bg for questions, green bg for answers
- purple buttons always go to context-sensitive help screens, which have purple backgrounds



- do not use different colors for each letter -> rainbow effect

rainbow effect

Use Meaningful Colors

- do not have warnings in green and basic instructions in red
- think of what the audience will expect
  - zebras are black and white, not red and green
  - stops signs are red and white, not yellow and black
- colors are cues that enhance the meaning of objects in the environment
- serve as signals that fruit is ripe or flames are hot
- objects of the correct color are identified and processed more easily

Use Meaningful Colors 2

CLICK ME

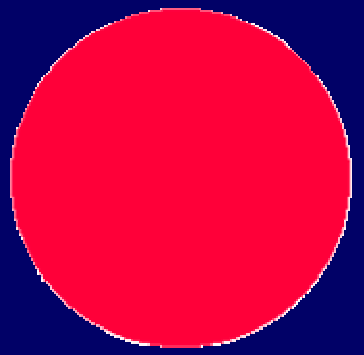
STOP STOP STOP

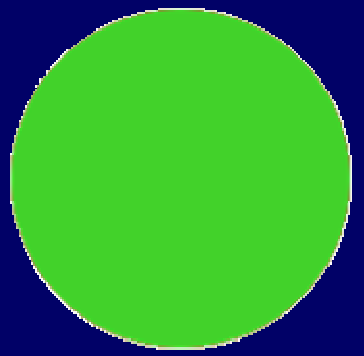
Use Meaningful Colors 3

- consider the CULTURAL significance of certain colors
- e.g. red
  - danger in western cultures
  - good luck in Chinese cultures
- colors also have EMOTIONAL connotations from their cultural context
- knowing cultural expectations can help you avoid some of these pitfalls

Use Meaningful Colors 4

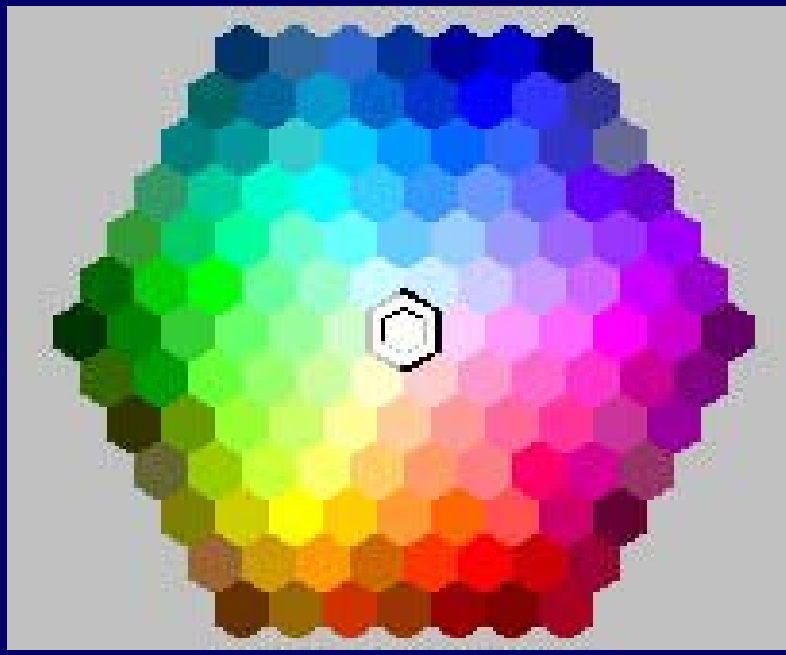
- examples of meaningful color cues include:
- red buttons
  - to stop a process
  - to exit from the system
- green buttons
  - to begin
  - to go ahead





Use Discriminable Colors to Separate Ideas

- color wheel
  - the colors red and blue are friends of the color violet
  - the colors violet and green are friends of the color blue



- **COMPLEMENTARY COLORS** on the opposite sides of the color wheel
- complementary colors that also differ in brightness are **THE MOST DISCRIMINABLE**

The Most Discriminable Color Pairs

- black and white (maroon and pink)
- red and green (rust and forest green)
- blue and orange (teal blue and brown)
- yellow and violet (tan and mauve)

Useful Information about Color

- how humans perceive color?
- how it affects us psychologically?
- how it affects us physiologically?

Perception of Color

- we perceive color as HUE, SATURATION, and LIGHTNESS
- not as red, green, blue channels common in computer programs

Psychological Effects of Color

- emotional and psychological connections
  - bright colors project energy and excitement
  - pastels are delicate (possibly feminine)
  - grayed colors seem reserved and sophisticated
  - muddy brown colors seem warmer and tend to appear closer to the viewer than green, blue, and purple
- color is not an absolute, it is a perception
  - a red square on a white background appears lighter than a red square on a black background
- color is always relative to its surroundings

Physiological Information about Color

- some green and red combinations can be uncomfortable to read
- white is more cheerful color than black
- white also means that more light reaches the eye
- glare and eyestrain, and the emotional factors associated with pain and headaches

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Physiological Information about Color

- green and yellow backgrounds are easier on the eyes, as they reduce glare
- they also enhance contrast
  - the image is sharper and more accurately focused on the eye retina

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Questions

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Thank You…