

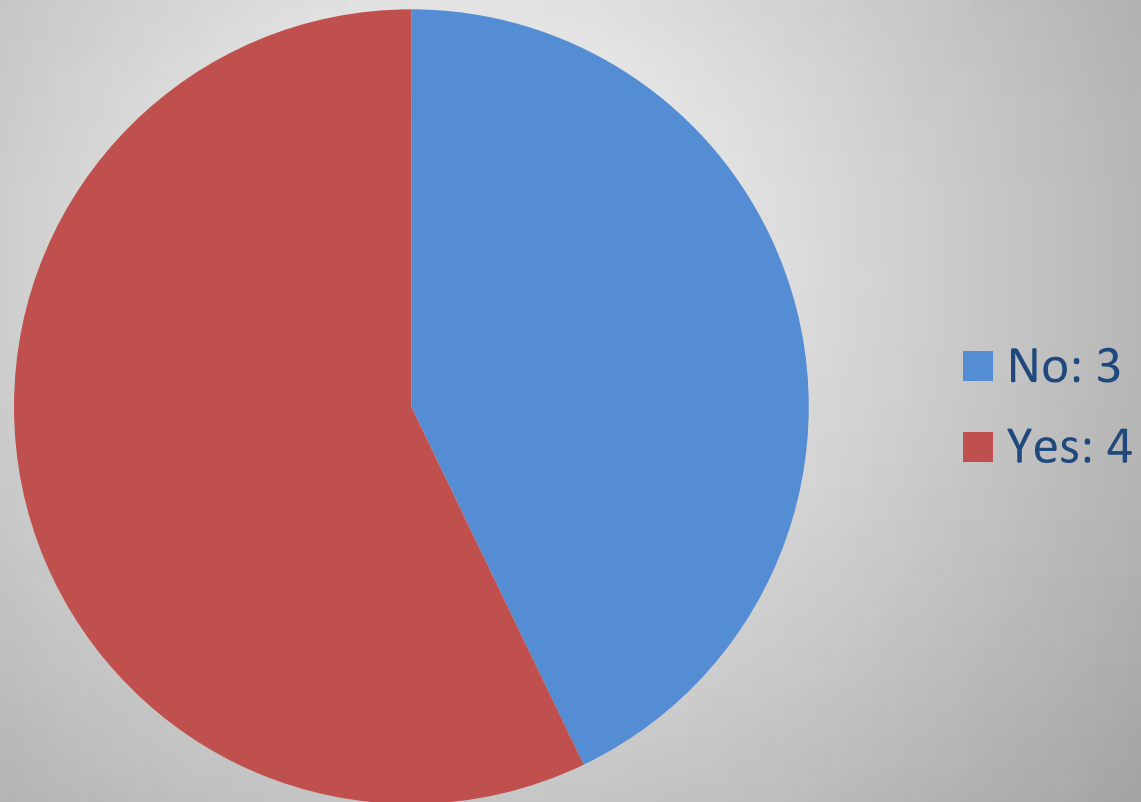
Color-Coding Helps You Remember

Laura McDiarmid, Olivia Baer, Matty Spicer, Maahi Mistry, Laura Benzing, Tonia Morris, Ta-Tyana Trammell

Healthcare Belief

Does color-coding help with recognition and recall of information?

Initial Group Vote

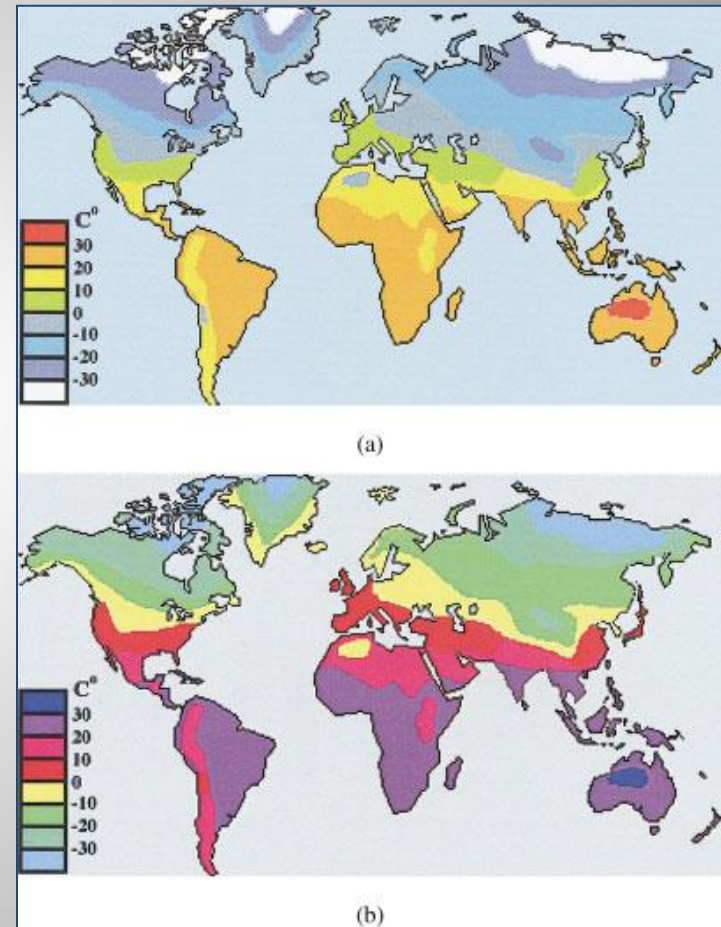


Background

- “A picture is worth a thousand words”
 - Learn better with visual aids
- Color’s effect on learning

Background

- Connotations of color vary in different times and cultures
- Consideration of color association is important
 - Thematic maps (temperature, agriculture)



Source: Cognitive Color
<http://onlinelibrary.wiley.com/doi/10.1002/col.10209/pdf>

Background

- Regions of the brain activated by color stimulus:
 - Inferior temporal
 - Parahippocampal and inferior frontal
 - Only activated by color (not B&W)
- No regions only activated by B&W
- More regions = better recall

Background

- Color diagnosticity
 - Degree to which a particular object is associated with a specific color
 - Can improve recognition of objects
 - Ex: raspberries are red; cars not associated with any specific color



Hypothesis

- Color-coding learning material will result in faster recognition and recall.

Experiment

- 30 people shown 15 slides
 - Each slide with one color image and one B&W
 - Slides shown for 5 seconds each
- Subjects performed 3 minute filler task (simple math problems)
- 2 minutes to recall the images they remembered

Data Analysis

- Colored images were recalled more often than the black and white
 - 70% of the subjects recalled more colored images than B&W

Conclusion

- Using color increases recognition and recall of objects and words
- Color stimulates more of the brain than black and white

Colorful Considerations

- Not all colors are created equal
 - Wavelengths
- Avoid side-by-side display of highly saturated color
- Avoid pure blue for text and thin lines
- Avoid red and green in the periphery of large displays
- Opposing colors go well together



Colorful Considerations

- Be sure duration of image is long enough to allow color perception
- Use dark colors for backgrounds and dense text
- Put light colors next to dark colors for contrast
- Use color sparingly
- Use four focal colors (red, green, blue, yellow) to enforce memory

References

- "Effect Of Colour On Recall Memory Of Images Psychology Essay." UKessays.com. 11 2013. All Answers Ltd. 06 2015 <<http://www.ukessays.com/essays/psychology/effect-of-colour-on-recall-memory-of-images-psychology-essay.php?cref=1>>.
- "Guidelines for Using Color Efficiently." CS 252. Oregon State University, 2000. Web. 22 June 2015. <https://web.engr.oregonstate.edu/~pancake/cs252/guide_color.html>.
- "Cognitive Color." Derefeldt, G., Swartling, T., Berggrund, U. and Bodrogi, P. (2004), Color Res. Appl., 29: 7–19. doi: 10.1002/col.10209.
<http://onlinelibrary.wiley.com/doi/10.1002/col.10209/abstract>
- Bramão, Inês et al. "Cortical Brain Regions Associated with Color Processing: An FMRI Study." *The Open Neuroimaging Journal* 4 (2010): 164–173. PMC. Web. 22 June 2015.

www.civiceducation.clevelandclinic.org

© Copyright 2015 Cleveland Clinic Foundation