Color/Font/Text Size: Developing Standards for Video Podcast

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ABSTRACT

A great deal of research has been done focusing on font, text size, and background colors for use with PowerPoint and on Web pages; but no research has been done to aid in the development of PowerPoint presentations for use on small screen devices such as the iPod.

In this study, the researcher developed a PowerPoint that tested font size and clarity, text color against background, as well as clarity of images and graphs and found that much of what works in a quality PowerPoint presentation for computer screens does not work for small screens. This paper presents the result of this study and suggests some guidelines that can be used to create video podcasts that can be viewed in a variety of settings; thereby making the video podcast a useful extension of the classroom PowerPoint.

Categories and Subject Descriptors

K.3.2 [**Computers and Education**]: Computer and Information Technology Education – *Computer education, Curriculum development, Information Technology education.*

General Terms

Management, Human Factors, Standardization.

Keywords

CAI, Computer Science Education, Computers and Education, Handheld Computers, Information Systems Education, Podcast, Podcasting, Video Development.

1. INTRODUCTION

The World Wide Consortium (W3C) suggests that individuals use "color visibility" to aid in selection of background and foreground colors or text against a background color [5]. One way to determine color visibility is to use the Luminosity Contrast Ratio which suggests that there be a large enough difference between the two colors that an individual who suffers from some colordeficiency would be able to view the screen [2]. The second method for looking at color visibility is through the Color Difference and Brightness Difference algorithm. This algorithm states that if the difference between the brightness of the two colors, combined with a large enough color difference, will result in good color visibility [4]. These two algorithmic suggestions led to the development of the Color Contrast Calculator [3] and, it is this calculator, combined with an eight pack of Crayola Crayons and Murch's work [1]on combining colors that led to the color choices used in this research project.

The colors selected for review by Murch (white, black, red, green, blue, cyan, magenta, and yellow) were combined with the colors that were found in a small box of crayons (red, orange, yellow, green, blue, purple, white, and black). The colors (and their RGB codes) selected for a comparison with the color contrast calculator were white (255-255-255), red (255-0-0), orange (255-128-0), yellow (255-255-0), green (0-255-0), blue (0-0-255), purple (128-0-128), pink (255-0-255), black (0-0-0), and gray (128-128-128). Each color was used as both a background and text for the comparison with the calculator. To pass, the calculator must determine that the level of brightness was greater than 125 and the color comparison was greater than 500. Using the calculator, it was found that the following color combinations passed both the level of brightness and the color comparison tests: red and white, black and white, yellow and blue, yellow and black, and purple and yellow.

Using these color combinations, a PowerPoint was created for viewing on both a computer screen and an iPod screen. Students were asked to assess the readability of text, tables, charts, legends, and images against the various backgrounds.

Despite the results of the Color Contrast Calculator, the colors that passed both tests are not necessarily good choices. For example, the red and white combination would not be usable for those individuals who suffer from red/green color blindness. Regardless of this issue, the red and white combination was used in the developed PowerPoint presentation and students were asked to view this combination as well as the others.

2. REFERENCES

[1] Brown, J. R., & Cunningham, S. (1989). Programming the user interface: principles and examples. John Wiley & Sons, Inc: New York.

[2] Juicy Studio. (2007). Luminosity Contrast Ratio Algorithm. Retrieved from the Juicy Studio Web Site: http://juicystudio.com/article/luminositycontrastratioalgorithm.php

SIGITE'07, October 18–20, 2007, Destin, Florida, USA.
ACM 978-1-59593-920-3/07/0010..

[3] Paradi, D. (2007). Color Contrast Calculator. Retrieved from the Think Outside the Slide Web Site: http://www.thinkoutsidetheslide.com/colorcontrast.htm

[4] W3C. (2000, April 26). Techniques for accessibility evaluation and repair tools, W3C working draft. Retrieved from the :http://www.w3.org/TR/2000/WD-AERT-20000426#color-contrast

[5] WAT-C. (2005). Tools - Colour Contrast Analyser 1.1. Retrieved from the Web Accessibility Tools Consortium Web Site: http:/www.wat-c.org/tools/CCA/1.1