The Web Designer’s Palette for Painting a Colorful Profit

Kevin Ferris, Computer Information Systems

Mentor: Dr. Sonya Zhang
Kellogg Honors College Capstone Project

ABSTRACT

Color, as a fundamental element of visual stimuli, has a substantial impact on our perception of what we see. Changing the hue or color scheme of any object will likewise have an effect on our emotional reaction. Web designers must pay careful attention to color theory and its effect on humans to develop successful websites. A good color scheme will convey unspoken persuasion to the user with a positive effect on brand perception and therefore sales.

First, a visual framework will be developed as a guide for novice designers to illustrate which factors to consider when deciding on a color scheme and help narrow the spectrum down to the most appropriate options for both websites and web applications.

Second, a study and its results will be described that tested the effectiveness of the framework on students’ ability to conceptualize effective color schemes for web design. The study was conducted through Google Forms and used multiple choice and open-ended questions to evaluate each student’s ability to select appropriate color schemes for a sample company. The control was evaluated based only on their personal knowledge, while the experimental group was introduced to the web color framework before being evaluated. The hypothesis for the test will be the following: The web color framework increases students’ ability to make effective and appropriate color scheme choices for web design application by a statistically significant degree.

RESEARCH

WEB COLOR FRAMEWORK

This is the web color framework that was developed based on the research in the left pane. It represents a funnel in the sense that as one goes through each layer of the framework, the total number of options are filtered down from infinite to just one choice that is both appropriate to the business and effective in execution. To test how well this framework helps novice students during the color scheme decision-making process, a study and its results are described below.

STUDY

In this study, students from the college of business, science, and engineering were asked to complete a Google Forms survey. Both the control and experiment group were given a company description and were asked a series of questions to assess their ability to conceptualize a color scheme for the design of the fictitious company’s website. The experiment group was also given an overview of the web color framework at the beginning of the survey.

The goal of the study was to determine if the Web Color Framework improved students’ ability to analyze relevant business information, conceptualize a color scheme, and rationalize, as well as test, their choices. The Google Forms survey was distributed via email through college email lists. 60 students were surveyed, 45 valid responses were received, among which 23 were in the control group and 22 were in the experiment group. The table to the upper right outlines the demographics of the participants in percentages for the control group, experiment group, and combined.

The survey contained 18-34 questions including multiple choice, fill in the blank, and short answer questions, and was estimated to take 15-30 minutes to complete. The questions contained in this survey fell under 6 categories: web framework quiz, business understanding, color scheme generation, justification, reflection, and demographics. The table to the lower right illustrates the grading rubric used when evaluating responses. Results were then aggregated and compared between the control and experiment groups.

RESULTS

When the total scores were averaged, the experiment group outperformed the control group by 11.08%. In the rubric subcategories, the most substantial areas of improvement were in the areas of company evaluation (65.07%), number of colors to use (24.06%), and harmonious matching of colors (14.83%). There were two areas of negative improvement: text (-7.75%) and other (-4.84%). The results proved positive, but do not pass the t-test, most likely due to the small sample size.

These results show that using the Web Color Framework allows students’ to gain a better understanding of color theory and develop color schemes that are more visually attractive by about 15%. This fact alone is great support for the Web Color Framework, as improving color harmony skills is one of the most important target metrics that the framework attempts to improve. While there were two areas of negative improvement, their significance is less so as they were only a secondary focus of the framework. It is possible that students’ in the experiment group only retained highlights from the core of the framework (business strategy and color theory) during their brief exposure.

REFERENCES