Print versus Screen Presentation Medium-Dependent Picture Consumption

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Abstract

We all have experienced the move from print to screen with the advancement of digital technology. We see college-aged young adults use their laptop for many things that previously involved print. This gives rise to many questions, including: Which medium do these young adults prefer? Are information consumption and retention different based on the viewing medium? Does the medium preference change depending on whether people look at a magazine or at photographs that they took?

The authors conducted three related projects aimed at taking the first steps toward identifying and understanding the differences in how information is consumed from print on paper versus computer display. Each project encompassed experimentation and an interview with the participants.

Part I: An Experimental Study of Presentation MediumDependent Differences of Picture Consumption by College-Aged Adults, focused on understanding the viewing preferences, printing behavior and content management behavior when the observers were looking at their own photographs.

Part II: An Experimental Study of Differences in Viewing Photo Books by Presentation Media: Print versus Screen dealt with various aspects of participants viewing a magazine-style publication that was heavy on photographic content.

Part I

An interesting future lies ahead for the consumer photographer. The use of digital technologies has forever changed how consumers are taking, sharing, and keeping their pictures. The dominance of a few market leaders in the conventional photographic consumer market has vanished. In the digital photography market, many new players are addressing parts of the value chain. As a result, the consumer is left with a wide array of choices. For the photofinishing industry, these choices are major and very difficult changes to deal with. Companies wanting to make money by selling either printed or digital products of digital images to consumer photographers need to understand how the change to digital photography has impacted the practices of consumer photographers. Understanding the printing behavior, presentation medium-dependent differences of picture consumption, and content management behavior of consumer photographers are the first steps in that direction. What will ultimately matter to consumers is whether the new technologies will allow them to more easily share (or display?) and keep their memories for a lifetime.

The objective of Part I of this study was to obtain an overall picture of the current state of consumer photographerspractices when it comes to taking, sharing, and keeping pictures. Experiments conducted on the presentation medium-dependent differences in picture consumption of the observers personal images showed that a majority of the participants preferred printed images to images viewed on a screen. Regardless of this preference, participants did not print images very often for a variety of reasons, including lack of time or money. In addition, results showed that the most commonly used printing tools included Kodak EasyShare Gallery, Shutterfly, and Flickr. Finally, participants cited Photoshop, Lightroom, and Picasa as the primary editing tools, with Facebook mentioned as the main sharing tool.

Part II

The advent of digital print engines capable of achieving high image quality has opened up many new and exciting print product opportunities, including the short-run printing of magazines. However, content available for magazines is also readily available online. The objective of this project was to take the first steps toward identifying and understanding the differences in how information is consumed from print on paper versus computer display and which characteristics of these media are particularly relevant in this comparison. This evaluation involved an assessment of differences for several metrics, including: information retention, time taken to view images, preferences for visually consuming information, and distribution of visual gaze as measured by eyetrackers. Two experiments were conducted, with the first addressing the first three of these four factors and the second focusing on the fourth, though touching on all four.

The second experiments conducted in Part II generally confirmed the results of the first; specifically, that people preferred the hard copy rendition over a PDF when given the choice (for reasons of image accessibility and tangibility), and that neither the time used to view the photo books nor information retention as measured by image recognition and information recall were affected by the medium in which the photo book was seen. The results of this study also agreed with earlier research findings that observers tend to fixate first and most often in the central areas of images. However, this research also found important differences between how the observers viewed the printed and screen versions of the photo book, with the screen group having more fixations per image for many of the images early in the book (although they did not spend more time with these images), while the print group switched more often between images. While the work conducted in the first experiment in Part II of this study suggested that there were no important differences between the print and screen groups of observers, the results of the second experiment hint at differences that may be important with regard to individual images or image layouts.

Biography

Franziska Frey is the McGhee Professor at the School of Print Media and a Core member of the Graduate Program Faculty of the PhD and masters programs in Imaging Science in the Center for Imaging Science at Rochester Institute of Technology, Rochester, NY.