Internet-Based Research for the Desktop and Beyond: Excellence for Web Design

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Directions in Internet Based Research

- Profusion of information available in the digital age
- Challenge of organizing and displaying this information
Directions in Internet Based Research

- Essential to explore means of presenting information on changing web vehicles
- Studies from the paper?
- Need a point to connect the paper to the study
IV: Web Previews

- Literature suggests that *textual previews* can improve:
  - Reading comprehension
  - User perceptions of website information
  - Sense of orientation within a website
  - Users’ focus while browsing

- *Topic announcements* can improve recall and comprehension
Research Question and Hypotheses

Research Question: How does preview type affect reading comprehension, perceptions and behavior on a multipage, informational website?

Hypotheses: (Discuss with Jan if there is need to present these)
Method

- Design: One way, between subjects design with three levels
IV: Preview Type– 3 levels

Teaser preview: The first sentence or first N words in the first paragraph of a webpage’s primary content.

Links with teaser previews

AIR QUALITY

Big Bend National Park—the name inspires varied impressions of the Southwest. One portrait is of majestic mountains towering above rugged badlands. Another is of the ribbon-like Rio Grande charging through sheer-walled canyons. But most commonly, Big Bend evokes images of panoramic vistas panning across endless miles of Chihuahuan Desert as far as the eye can see.

Battle for Clean Air
On some days of the year Big Bend’s air quality is so good that visitors can actually see the detail of large objects over 100 miles away.

Impacts to Visibility
Air quality in this area varies significantly by season, with the summer season typically having the poorest visibility and winter season the best...

Monitoring Program
Big Bend’s monitoring program includes many data collection systems...

BRAVOJ Study
In 1999, the Environmental Protection Agency issued a new regulation called the Regional Haze Rule...
IV: Preview Type—3 levels

Topic Announcer: A phrase or sentence that describes the main topic of a webpage’s primary content.

**Links with topic announcers**

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**Battle for Clean Air**
Learn about Big Bend’s battle for clean air.

**Impacts to Visibility**
Learn about the impacts to visibility in Big Bend.

**Monitoring Program**
Learn about the monitoring program at Big Bend.

**BRAVO Study**
Learn about Big Bend’s BRAVO study.
IV: Preview Type– 3 levels

- Link List only: Display of links only

**Preview as link list**

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- Battle for Clean Air
- Impacts to Visibility
- Monitoring Program
- BRAVO Study
Materials

- A U.S. National Park Service website featuring the Big Bend National Park
- Instruction page
- Pre–Survey & Post–Survey

Water Flow

The Rio Grande, the second longest river in the United States, is no longer a naturally flowing river. Extensive networks of diversion and dams control flows on both the Rio Grande and the Rio Conchos. Neither river is currently managed to provide an in-stream flow needed to sustain riparian habitat. Persistent drought conditions have existed in northern Mexico and southwest Texas for over six years.

Ironically, reservoirs in New Mexico were full to the point of overflowing because of above average snowfall in New Mexico and Colorado. Yet, these waters were unavailable to the downstream Rio Grande community. The Rio Grande Compact Commission, a three state entity representing Colorado, New Mexico, and Texas, manages water flows of the Rio Grande from its headwaters in Colorado to Fort Quitman, Texas, which lies downstream of El Paso. Established in 1938, the Commission manages private water rights, some of which date to the 1800s, and apportions the Rio Grande’s flow.

The bi-national International Boundary and Water Commission (IBWC) manages the water in the Rio Grande from Fort Quitman to the Gulf of Mexico. A 1944 treaty between the United States and Mexico allocates all of the water entering the Rio Grande from the major tributaries on the United States side and at least one-third of the combined annual flow from the six Mexican tributaries to the United States. The Rio Conchos is the largest of the six Mexican tributaries. Although the treaty also defines a minimum flow based upon a five-year average, the treaty does not establish release schedules for the Mexican rivers.

The tributaries of the Rio Grande carry large amounts of sediment to the river during flash floods. Historically, this sediment would later be carried away by the large flows of the Rio Grande, and the
Recruitment

Participant pool at the HCDE dept
Procedure using WebLabUX

URL to study sent to participants via email
By clicking on the link, they logged on anonymously
First read the welcome page, then proceeded to pre-survey
Presented with instructions to the study
Randomly assigned to a web preview condition when they clicked the continue to study button
After browsing, directed to post surveys before exiting
Procedure– Example condition

Structure of the Web Study: What the User Experiences in One of the Conditions
Results

- --- participants in total
- P value set to .05 to determine significance.
- Results analyzed in SPSS version 17.
Results – Significant findings

- Talk to Jan abt new stuff
- Comprehension
  - One way ANOVA revealed no significant differences in total comprehension scores across the 3 conditions, $F(2, 82) = .364, p > .05$
- Perception
  - One way ANOVA revealed no significant difference in SUS scores across the 3 conditions, $F(2, 82) = .950, p > .05$
Discussion

- Talk to Jan
Discussion – Future directions for study

- Plans to add a second IV$\text{}_2$ for future studies:
  Display Size – 2 levels

- Large Screen – Desktops & Laptops

- Small Screen – Internet Capable Cell phones
Challenges in Mobile Spaces

- Why is mobile computing important?
  - Dramatic increase in the number of users who surf online via their mobile devices
  - Growth largely due to improvements in mobile online technology
  - Need for research in this domain
Challenges in Mobile Spaces

- Research in the mobile space
  - Ensuring ecological soundness of internet-based research on mobile browsing
  - Importance of taking into account natural settings (continuous attention disrupted)
Challenges in Cloud Computing

- What is Cloud computing?
- How does it relate to us?
Internet Based Research in Mobile Spaces

- Internet Based Research Tools
  - Web Lab UX
  - User Zoom
Future Trends

- Significant change in how people access the web
- Need for better tools for internet based research
Interested?

- Please visit us at:
Thanks and Question slide