Joy Holster  
Dr. Southard  
English 7701  
April 12, 2004

Project 2: Effects of Scannable Design on Educational Web Pages

Introduction:

An unregulated explosion of Web page publishing by Internet users with varying degrees of design experience has led to a World Wide Web brimming with dreadful examples of bad design. The proliferation of Web pages with chaotic backgrounds, incompatible colors, or illegible blinking text has given rise to an entire industry of Web design gurus, who offer up for the masses their intuitive, common sense guidelines for effective and attractive Web design.

Following on their heels, scholarly researchers have begun delving into the topic, producing a few careful studies of how Web design affects users. Attention to Web page design makes quite a difference, according to researchers Dalal, Quible, and Wyatt, who determined that increased comprehension resulted from pages designed to help a user develop a mental model of its contents. Researcher Xigen Li also studied the importance of design, finding positive correlations between Web page design and page users’ efficiency of information retrieval. Christian Loh and Michael Williams found that a crucial design choice for educational Web pages was the inclusion of presentational elements that motivate learning.

Another crucial element of effective Web page design, suggested by a number of researchers, is design for scannability using subheadings, bulleted lists, bold text, and shorter line length (Morris, Will-Harris, Morkes and Nielson). Scannability was one of three elements measured in a Web design study conducted by John Morkes and Jakob Nielson, who concluded that users of specifically designed pages (devised to be concise, scannable, objective, or a combination of all three) completed tasks faster and with more accuracy, with higher subjective satisfaction, than users of non-designed pages (par. 83). In a Web style guide provided by the Engineering Communication Center at the University of Toronto, the authors conclude, “users prefer scannable text, so that they can glance over a page and quickly gauge its value” (par. 2). In Web Style Guide: Basic Design Principles for Creating Web Sites, Patrick Lynch and Sarah Horton state that users want to quickly “ascertain the contents of a page, get the information they are seeking and move on” (par. 2). In her online “Web Teaching Guide,” Horton encourages page designers to “guide the reader by highlighting the salient points…using headings, lists, and typographical emphasis” (par. 6).
Problem:

While existing studies have focused on the benefits of scannability for the casual Web user, who quickly scans the text and then moves on, not much has been done to measure how this design choice might affect those Web users whose objectives are academic. The goal of this research is to examine the effects of design for scannability when it is applied to educational Web pages used by students engaged in online learning.

Question:

While scannability is considered a crucial element of effective Web page design, what impact might this design choice have on students using educational Web pages for online learning? Would incorporation of design elements intended to facilitate scannability on educational Web pages improve college students’ ability to retain information from those pages?

Hypothesis:

College students will retain a greater percentage of subject matter knowledge using scannable web pages than non-scannable ones.

Definition of Terms:

Scannable Web pages are defined as those pages that incorporate design elements such as bulleted lists, bold text, subheadings, and shorter line length. Non-scannable Web pages are those with unembellished text. Subject matter knowledge in this context is knowledge of the content in the Web page assigned to the test subject. Preexisting subject matter knowledge will be determined by the number of correct answers on a memory test consisting of 15 multiple choice questions and 15 True/False questions. Percentage of subject matter knowledge retained will be determined by test scores on the final test, taken after students have completed a timed reading of the web page.

Variables:

Variables that should be controlled to avoid undue influence on the outcome of the study include test subjects’ pre-existing levels of intelligence, motivation, and online learning experience, as well as pre-existing knowledge of the subject matter presented on the test Web pages. Variables to be created for use in the study include two web pages – one scannable and one non-scannable – containing identical
subject matter. Data will be gathered through identical memory tests to determine amount of information recall, a pre-test to establish pre-existing subject matter knowledge, and a questionnaire to determine pre-existing experience in online education.

Outcomes:

Test subjects assigned to the Web page designed for scannability will achieve a higher percentage of correct answers than subjects assigned to the non-scannable page. Scores from subjects using the scannable pages should be at least 25% higher than scores from subjects using the non-scannable page.

Research Design:

The influence of control variables and independent variables (characteristics of participants) on test results will be minimized by pre-selecting test participants. A 30-question pre-test will determine pre-existing subject matter knowledge and a Likert scale questionnaire will measure levels of pre-existing online learning experience. Ideal participants should score less than 20% of correct answers on subject matter pre-tests, and fall within one standard deviation of the mean on pre-existing levels of online learning experience. The influence of potentially diverse levels of intelligence and motivation will be minimized by pre-selecting participants from a group of 150 East Carolina University (ECU) second-year undergraduates, of comparable age and with approximately equal male to female ratios, whose cumulative grade point average falls between 3.0 and 3.5 on a 4.0 scale. These methods will narrow selection to a participant pool of approximately 80 - 100 test subjects, from which 50 test participants will be chosen based upon pre-selection testing. Those 50 participants will then be randomly assigned to either the scannable or non-scannable Web page.

Testing sessions will be conducted at ECU computer labs on identical computer equipment. Random assignments will be made as test subjects enter the testing area, through distribution of paperwork containing a URL for one of the two Web pages. Test subjects will not be told about the purpose of the testing, or that two different pages exist.

Space limitations mandate two separate testing sessions, with each of two sessions having approximately equal ratios of assignments to the scannable and non-scannable Web page. The same test proctor will direct both sessions, reading aloud from the same set of written instructions.

A test proctor will read written instructions and control time allotted for Web page reading and test completion. Data to be gathered in the research include the test subjects’ amount of pre-existing subject matter knowledge and web-based learning experience, measured through pre-tests and questionnaires, and test participants’ amount of subject matter knowledge, to be measured by the number
of correct answers on a memory test presented after subjects have completed a timed reading of the randomly assigned web page.

After the proctor reads initial instructions, test subjects will begin a 20-minute timed reading of the assigned web page. At the conclusion of the timed reading, the proctor will halt the reading and ask subjects to switch off computers. The proctor will provide additional instructions and then distribute identical memory tests to all test subjects. Participants will be allowed 30 minutes to complete the test, after which they will turn completed tests in to the test proctor and leave the testing session.

Research Materials:

- Web pages:
  - Scannable web page located at http://personal.ecu.edu/holsterj/research/ethics.html
  - and Non-Scannable web page located at http://personal.ecu.edu/holsterj/research/research.html

- Pre-selection tests:
  - Subject Matter Pre-test: A test of preexisting subject matter knowledge will weed out those participants who are already well-versed in the research subject. Pre-test to be presented in a casual setting during pre-selection of participants. See Attachment 1: Subject Matter Pre-test.
  - Computer Literacy/Web-based Learning Experience Questionnaire: A test of preexisting computer literacy and experience with web-based learning will weed out those participants who fall in either the extremely skilled or extremely unskilled categories in terms of computer and Internet experience and capabilities. Questionnaire to be presented in a casual setting during pre-selection of participants. See Attachment 2: Computer Literacy/Web-based Learning Experience Questionnaire.

- Proctor Instructions: proctors will be provided instructions for walking students through the testing process from the moment participants enter the room until the testing is complete. See Attachment 3: Proctor Instructions.

Welcome Materials:
- Proctor will present welcome materials to each testing participant as he or she enters the testing facility. These materials will contain preliminary instructions while also serving as a random distribution of test participants to one of the two web pages. See Attachment 4: Welcome Materials.

Final Test:
- Following a timed reading of either the scannable or non-scannable web page, participants will take a timed memory test to determine how much knowledge was gained from reading the material. See Attachment 5: Final Test.
• Answer Sheets
  ■ Student Answer Sheets will be provided for students to fill in their answers for the
    o Preexisting Subject Matter Pre-Test
    o Computer Literacy and Web-Based Learning Experience Questionnaire
    o Final Test
  See Attachment 6 – Student Answer Sheets.
  ■ Researcher’s Answer Sheets have been prepared indicating correct answers for the
    o Preexisting Subject Matter Pre-Test
    o Final Test
    (The Computer Literacy/Web-Based Learning Experience Questionnaire is subjective and has no
     correct or incorrect answers; therefore no researcher’s answer sheet is required.) See Attachment
     7 – Researcher’s Answer Sheets.

• Data Coding Forms
  ■ Three data coding forms will enable the researcher to collect data such as test scores and subjective
    ratings of participants’ computer/online learning experience from
    o the Computer Literacy/Web-Based Learning Experience Questionnaire
    o The preexisting subject matter pre-test
    o And the final test
  ■ An additional form will facilitate recording of all test information onto one form.
    See Attachment 8 – Data Coding Forms.

**Analyses of Variables:**

Consultation with statistical experts will be required for analysis of research results. However, the
following approach to analysis is anticipated:

This research will be a quantitative approach with one subject group completing two tasks (the
timed reading followed by the timed written test) under two conditions – use of the scannable or non-
scannable page.

Statistical methods, such as the t-test analysis, should be used to measure differences between
scannable/non-scannable page users and retained subject matter knowledge (as measured by percentage of
correct answers on final test). A majority of scannable page users should show statistically significant
higher percentages of correct answers when compared to users of the non-scannable web pages.

A multivariate analysis should be used to measure correlations between scannable/non-scannable
page users, amount of retained subject matter knowledge, pre-existing levels of subject matter knowledge
(as measured by percentage of correct answers on the pre-test), and pre-existing levels of online learning
experience (as measured by questionnaire). Because of pre-selection methods, pre-existing levels of
subject matter knowledge and online learning experience should produce negligible effects on amounts of retained subject matter knowledge.

**Ongoing Study:**

Results of this study will determine how Web pages designed using a combination of four elements that enhance scannability – bulleted lists, bold text, subheadings, and shorter line length – affect college students’ ability to retain information from those pages. This initial study does not clarify, however, what consequence each of those four elements might have when used independently, or whether any one of the individual elements is more or less effective than the other. To obtain this data, a second phase of research is required. Similar in design to phase one, the second phase of study should include the two Web pages already prepared for phase one (the scannable and non-scannable pages), along with four additional pages, each of which incorporates one and only one of the four design elements. Comparisons can then be drawn between a non-scannable page, a page combining all four elements, and pages that incorporate each of the elements independently.

Phase one should support the hypothesis that combining four elements of design to increase scannability improves college students’ ability to retain subject matter knowledge from educational Web pages. Phase two should identify details about those four elements, rating them in terms of their effectiveness. Phase two results should recommend the best combination of design elements that educators could use to help students retain subject matter knowledge from educational Web pages.
Works Consulted


Attachment 1: Subject Matter Pre-test

The following test is designed to determine your pre-existing knowledge of current events related to information included in the research study. You have 30 minutes to complete the test. Remember to use the answer sheet provided, and to include your name and id number on the answer sheet. Please do not share the questions or answers on this test with other test participants.

Please answer the questions to the best of your ability. If you do not know the answers or find yourself unfamiliar with the test topic, please continue with the test and supply your most thoughtful answer choice for each question.

Your test results will apply only to this research and will not affect your academic standing.

Multiple Choice
Enter your answer to questions 1 through 15 next to the corresponding number on the answer sheet.

1. Eason Jordan, chief news executive of the news media giant CNN, surprised the nation in April 2003 with a public admission that
   A. CNN had withheld news about atrocities in Iraq
   B. CNN had worked closely with government leaders in Iraq to get access to the best stories
   C. CNN deliberately published some of Saddam Hussein’s propaganda so they could keep their reporters in the country
   D. CNN reporters were overwhelmingly against the war in Iraq

2. Professional journalists in Iraq had to endure
   A. daily death threats from Iraqi police
   B. surveillance of their activities even in their hotel rooms
   C. prolonged separations from their families without telephone or electronic contact
   D. humiliating searches for weapons when covering news events

3. One of the most difficult aspects of managing CNN’s coverage from Iraq was
   A. the danger of being killed or injured
   B. maintaining reporters’ access to the country
C. having to report obvious propaganda from the Hussein regime
D. being away from home and family

4. CNN decisions about how best to report on the Iraqi war considered
   A. potential dangers to the families of CNN employees
   B. potential dangers to the CNN employees
   C. maintaining good relationships with appropriate representatives from the Hussein regime
   D. all of the above

5. Patriotism in America following the terrorists attacks of Sept. 11
   A. had no impact on CNN coverage of the war in Iraq
   B. went unnoticed by journalists who were stationed in Iraq because the Hussein regime
      withheld coverage of patriotic events in America
   C. had more impact on the people watching the news than on the people reporting it
   D. was a concern for journalists who wanted to report the news objectively yet felt obliged
      to show themselves supportive of the war effort

6. Eason Jordan admitted that CNN had knowledge of atrocities committed in Iraq by the
   Hussein regime and
   A. offended the American people daily by reporting those atrocities in graphic detail
   B. withheld the knowledge for fear of retaliation on CNN employees and their families
   C. used the knowledge as leverage to get the best assignments from the Iraqi regime
   D. sold the rights to the information to competing news agencies

7. The political climate in America following Sept. 11 caused those who spoke out against the
   war to run the risk of
   A. being labeled un-American
   B. being labeled a Republican
   C. being labeled a Communist
   D. being labeled a terrorist

8. When Eason Jordan explained wartime decisions made at CNN, his professional peers
   A. were quick to criticize his choices
   B. expressed their understanding of the difficulty of wartime coverage
C. said Jordan had made a deal with the devil
D. said Jordan’s decisions were necessary if he wanted to work in Iraq
E. all of the above

9. Jordan faced an ethical dilemma in Iraq because
   A. journalists were being held prisoner by the Hussein regime in exchange for coverage of Hussein propaganda
   B. CNN employees knew where Hussein loyalists were hiding but could not divulge the information due to fear of retaliation
   C. there were conflicts between Jordan’s concern for the safety of CNN employees and his concern for CNN’s ability to continue reporting the truth from Iraq
   D. all of the above

10. An essential part of a news executive’s job in Iraq was
    A. to record private conversations that took place among members of the Hussein regime
    B. to maintain good relationships with Hussein’s Ministry of Information
    C. to arrange for Iraqi language interpreters for all CNN reporters
    D. to monitor radio broadcasts for news of bombings in Baghdad and surrounding locations
    E. all of the above

11. Journalists who called an ethics advice line in America during the Iraq war were most concerned about
    A. whether or not to include graphic and disturbing images in their war coverage
    B. whether their careers would suffer if they requested reassignment back home in the U.S.
    C. whether it was fair for embedded journalists to be constantly putting their lives at risk
    D. whether it was possible to cover the war objectively in the midst of an intense patriotic climate in America

12. Jordan’s primary reason for the decisions explained in his April 2003 article was
    A. fear for the safety of CNN employees and their families
    B. fear that CNN would lose market share
    C. fear that Americans had heard enough about the atrocities of war
    D. fear that competitors would publicize the information before CNN
13. Information about the Hussein regime that Jordan knew and did not disclose included
   A. planned assassination attempts on President Bush
   B. planned assassination attempts on Hussein family members
   C. planned terrorist attacks against American “soft targets”
   D. all of the above

14. A professional journalist who wanted to report from Iraq had to
   A. obtain and maintain an active visa to the country
   B. submit weekly written reports outlining which stories were reported
   C. agree to have no telephone or e-mail contact with friends and family
   D. all of the above

15. When Jordan published “The News We Kept to Ourselves,” it ran first in
   A. The Washington Post
   B. The New York Times
   C. CNN’s web site
   D. USA Today

**True/False**
Enter T for true or F for false next to the corresponding number on your answer sheet.

16. The article that Jordan wrote was an explanation and apology for CNN’s use of unsubstantiated and untrue news stories.

17. The article that Jordan wrote was an explanation and apology for CNN’s use of graphic portrayals of the war that many Americans found offensive.

18. The article that Jordan wrote was an explanation and apology for CNN’s choices regarding withholding information on Iraqi atrocities.

19. The article that Jordan wrote was an explanation and apology for CNN’s unscrupulous practices in competing with other networks.

20. The article that Jordan wrote offered an indepth look at life as an Iraqi prisoner of war.
21. Journalists have a professional code of ethics that insists they make every effort to avoid harming themselves, their colleagues, or the people who are the subject of their stories.

22. A professional journalist has a code of ethics that urges him or her to seek out and report the truth.

23. A professional journalist has a code of ethics that indicates the successful delivery of an important news story takes precedence over individual safety.

24. Under Saddam Hussein’s regime, a CNN cameraman was beaten and tortured with electric shocks.

25. Under Saddam Hussein’s regime, CNN broadcasts were routinely monitored.

26. The Hussein regime, if dissatisfied with a reporter’s take on the war, could and did cancel or refuse to renew reporters’ visas to stay in the country.

27. CNN and other news media sometimes knowingly published the Hussein regime’s propaganda.

28. Professional journalists usually base their decisions about war coverage solely on how their stories will be received in America.

29. CNN and Jordan did not disclose knowledge of planned assassination attempts on Hussein family members.

30. Jordan’s experience in wartime Iraq shows the difficulty of making clearly ethical decisions during a time of war.
Attachment 2: Computer Literacy/Web-based Learning Experience Questionnaire

On a scale of 1 to 10, rate the following statements based upon your pre-existing levels of knowledge about computers (computer literacy) and prior experience with web-based learning. Please answer truthfully because your responses might impact test results. For each question, indicate on the answer sheet in the space provided the number that most closely corresponds to your feelings about the statement. A selection of 1 indicates that you strongly disagree with the statement and a selection of 10 indicates that you strongly agree with the statement.

1) I have both experience and confidence in computer operations.
   Strongly disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

2) I have taken at least one web-based course while at East Carolina University.
   Strongly disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

3) I have taken more than three web-based courses at the college level.
   Strongly disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

4) I have taken at least one web-based course at the high school level.
   Strongly disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

5) I have experience using the Internet to research topics for inclusion in academic research at the high school level or below.
   Strongly disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

6) I have experience using the Internet to research topics for inclusion in academic research at the college level.
   Strongly disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

7) I have experience researching personal topics using the Internet.
   Strongly disagree 1 2 3 4 5 6 7 8 9 10 Strongly Agree

8) I have experience using computers for word processing, game playing, and/or accessing e-mail.
Strongly disagree  1  2  3  4  5  6  7  8  9  10  Strongly Agree

9)  I am confident in my abilities to gather information using a computer.
   Strongly disagree  1  2  3  4  5  6  7  8  9  10  Strongly Agree

10) I am confident in my abilities to gather information from the Internet.
    Strongly disagree  1  2  3  4  5  6  7  8  9  10  Strongly Agree

In the following questions, indicate on a scale of 1 to 10 how much time you spend in an average week on the tasks discussed. An answer of 1 would indicate that you spend 0 hours on the task in an average week, while an answer of 10 would indicate that you spend 15 or more hours on the task in an average week.

11) I use the Internet for personal reasons and/or entertainment.
    No time at all  1  2  3  4  5  6  7  8  9  10  More than 15 hours a week

12) I use the Internet to learn more about the topics I am studying in college classes.
    No time at all  1  2  3  4  5  6  7  8  9  10  More than 15 hours a week

13) I use the Internet to complete assignments for college courses.
    No time at all  1  2  3  4  5  6  7  8  9  10  More than 15 hours a week

14) I use the Internet to conduct research using scholarly journals and publications.
    No time at all  1  2  3  4  5  6  7  8  9  10  More than 15 hours a week

15) I am currently using the Internet as a member of a web-based college level class.
    No time at all  1  2  3  4  5  6  7  8  9  10  More than 15 hours a week

16) In previous semesters, I have used the Internet as a member of a web-based college-level class.
    No time at all  1  2  3  4  5  6  7  8  9  10  More than 15 hours a week
17) I have previously used the Internet as a member of a web-based learning class at the college level.
   No time at all   1   2   3   4   5   6   7   8   9   10   More than 15 hours a week

18) I have previously used the Internet as a member of a web-based learning class for personal use, not as part of a conventional educational program. Examples might include classes taken to learn more about personal interests such as photography, auto mechanics, or cooking.
   No time at all   1   2   3   4   5   6   7   8   9   10   More than 15 hours a week

19) When I am not on the Internet, I use a computer to help in my college classwork (uses such as word processing, database management, etc).
   No time at all   1   2   3   4   5   6   7   8   9   10   More than 15 hours a week

20) When I am not on the Internet, I use a computer for entertainment and personal interests (gaming, writing letters, digital photography, etc.).
   No time at all   1   2   3   4   5   6   7   8   9   10   More than 15 hours a week

Return to discussion of research materials
Attachment 3: Proctor Instructions

Note: Material to be read aloud is in italics.

Welcome/Introduction

• As each participant enters the computer lab, give each student a packet containing the welcome material.
• Ask participants to take a seat and read the first page, and first page only, of the welcome material.
• Ask students to refrain from speaking to each other until the testing can begin.
• You will be provided a list of participants for each of two testing sessions. When all students on the list for each session have arrived and are settled at computer stations, begin by introducing yourself and thanking them for their participation.
• Reiterate the instructions already provided to participants in their welcome material as follows:
  - Although you have already read through the instructions, I’d like to reiterate the following:
    - Your participation will be most helpful to researchers if you are serious in your approach to this testing process. Please conduct yourself as if you were participating in a graded activity, by reading testing materials carefully and providing thoughtful responses to questions.
    - Please do not compare any written materials or answers to written questions with your neighbors. Please concentrate on your own work and do not inspect the activities of others.
    - Please do not speak with your neighbor once the testing has begun. If you need assistance during the test, please raise your hand and I will come to you.
    - Please do not turn the page until I tell you to.

Getting Started

• Read the following aloud:
  - You will be participating in research on web-based learning by studying a web page and then providing answers to questions about the information on the page.
  - You will first complete a timed reading of the web page. You will have 20 minutes to read the page.
  - Please open Internet Explorer. If you have any difficulty finding or opening Internet Explorer, raise your hand.
  - When you are ready, let me know by looking up toward the front of the classroom. When everyone is ready, we will begin.
Ascertain that all participants have opened Internet Explorer and are ready to continue.

Then read the following:

- Turn to page two of your instructions.
- On page two, you will be given a web address. Go to that web page by entering the url in Internet Explorer. When you have found the page, look up.
- Please do not begin reading the web page until I tell you to do so.
- If you need assistance locating the web page, raise your hand.

Ascertain that everyone has found the assigned web page.

Set the timer for 20 minutes and tell participants to begin reading.

Conclude Reading Portion of the Test

After 20 minutes has elapsed, tell participants to stop reading and turn off computers.

Begin Written Portion of the Test

Read the following:

- I will now distribute written tests.
- Please keep the test and answer sheets face down on your desk until I tell you to turn them over.
- If you need assistance during the test, please raise your hand.
- When you have completed the test, turn your test and answer sheet face down on your desk and wait quietly for others to finish.
- You will have 30 minutes to complete the test.

Distribute tests and student answer sheets.

Ask the students to turn the answer sheet over and write their name and id # on the answer sheet in the space provided.

Remind students to enter test answers on the answer sheets, not on the test itself.

Set the timer for 30 minutes and tell participants to turn the test over and begin.

Complete Testing Procedure

When 30 minutes has elapsed, ask participants to stop the tests and turn their tests face down on their desks.

Collect all tests.

Inform participants that they are finished and they can leave the testing facility.

Return to discussion of research materials
Attachment 4: Welcome Materials

Welcome, research participant!

Thank you for agreeing to participate in this web-based learning research. Your responses will be valuable in determining methods to best present information over the web for online learning.

Your participation will be most helpful to researchers if you are serious in your approach to this testing process. While the test results will have no effect on any of your ECU course grades, please conduct yourself as if you were participating in a graded activity, by reading testing materials carefully and providing thoughtful responses to questions.

Please do not compare any written materials (including these instructions) or any answers to written questions with your neighbor(s) in the lab. Please concentrate on your own computers and do not inspect the activities of your neighbor.

Please do not speak with your neighbor once the testing has begun. If you need assistance from the test proctor during the test, please raise your hand and the proctor will come to you. When you reach your computer station, please power up your computer and wait for further instructions from the test proctor.

Thanks again for agreeing to participate in this research.

Please do not turn the page until told to do so.
(Page two of instructions will include only one of the following two urls, which will randomly send participants to either the designed or non-designed page. Only one url will appear on the actual instructions, either

http://personal.ecu.edu/holsterj/research/ethics.html

or

http://personal.ecu.edu/holsterj/research/research.html.)

Return to discussion of research materials
1. Holster’s research on ethical dilemmas in wartime journalism focused on
   A. problems faced in wartime society
   B. how journalists cope with ethical decisions during wartime
   C. how journalists become less honest during war
   D. how media broadcasts graphic photos in wartime
   E. all of the above

2. At the time of the incident described in Holster’s research, Eason Jordan was
   A. CNN’s chief news executive
   B. CNN’s chief Baghdad correspondent
   C. a network news anchor
   D. War correspondent for Fox News

3. Jordan’s article that shocked the nation first appeared
   A. On the CNN web site
   B. In the Washington Post
   C. In the New York Times
   D. On the Poynter Institute web site
   E. A and B only

4. The article shocked the nation because the news organization
   A. deliberately withheld facts about Iraqi atrocities
   B. published graphic images of Iraqi atrocities
   C. refused to rescue journalists captured by Saddam Hussein
   D. revealed that Hussein’s regime did not possess weapons of mass destruction

5. Peer reaction to Jordan’s article was mixed, because
   A. Some recognized the ethical dilemma that Jordan faced
   B. Some believed Jordan’s decisions were self-serving
   C. Some understood the complexity of Jordan’s situation
   D. Some felt his decision was necessary if he wanted to continue to work in Iraq
   E. All of the above
6. Covering the news from within Iraq included such restrictions/difficulties as
   A. constant monitoring of broadcasts
   B. observation of journalists in their hotel rooms
   C. difficulty obtaining and keeping visas to be in the country
   D. all of the above

7. Network executives “courted” Hussein’s Ministry of Information because
   A. they were given better assignments if they were on friendly terms
   B. in return, they were given one-on-one interviews with upper level Iraqi military personal
   C. it was necessary to maintain a good relationship so they could get reporters into the country on visas that were difficult to get
   D. they were in danger of retaliation if they did not
   E. all of the above

8. Journalists who called an ethics advice line in America expressed a great deal of concern about
   A. how graphic their coverage of the war should be
   B. the prevailing sentiment of patriotism in America
   C. how dangerous the wartime assignments could be
   D. all of the above

9. The Society for Professional Journalists (SPJ) Code of Ethics says that journalists should
   A. seek out and report the truth
   B. minimize harm
   C. avoid damaging their integrity or credibility
   D. all of the above

10. Jordan’s situation in Iraq presented an ethical dilemma because
    A. the ethical guidelines were in conflict
    B. he was concerned for the safety of others
    C. he wanted his organization to stay in Iraq
    D. All of the above

11. Studying Jordan’s ethical dilemma can make one think about
A. how we might behave in similar situations
B. whether Jordan chose the right profession
C. whether we are wise to watch the evening news
D. which media outlets are better sources for the news

12. “Shades of gray” refers to
   A. the colors in photographed images of the war
   B. the aging of journalists covering the war
   C. the lack of clear black and white solutions to ethical dilemmas
   D. the view from behind the camera in wartime coverage

13. Jordan’s primary reason for withholding information, according to his article, was
   A. the danger for CNN employees in Iraq if the information was published
   B. his need to verify all the information as truthful
   C. fear of retaliation against himself and his family in the U.S. if the information was published
   D. all of the above

14. Jordan could have used the Society for Professional Journalists (SPJ) Code of Ethics to support his decision to withhold information because the code states journalists should
   A. endeavor to maintain good relationships with the leadership of the country where one is operating
   B. report the news that will be most fascinating to the American people
   C. minimize harm by treating subjects, sources, and colleagues as human beings deserving of respect
   D. put themselves in harm’s way if necessary to get a story

15. Jordan and CNN withheld information about
   A. planned assassination attempts on Hussein family members
   B. electroshock torture of political prisoners
   C. planned assassinations of journalists
   D. all of the above

**True/False**
Enter T for True or F for False on your answer sheet next to the number that corresponds to each question.
16. “The News We Kept to Ourselves” was Jordan’s way of explaining his choices to the American public.

17. Sources used in the article included Holster’s personal interviews with journalists.

18. Jordan felt his decision was a great burden.

19. Jordan faced an ethical dilemma with no easy answer.

20. Patriotism in America following terrorist attacks of Sept. 11 was the primary reason Jordan chose to withhold information.

21. Patriotism in America following the terrorist attacks of Sept. 11 was a primary element affecting how Americans reacted to Jordan’s decision once it was made public.

22. An important lesson in the story of Jordan’s experience is that it is best to avoid telling the public frightening stories about the war.

23. The most important aspect of Jordan’s experience is its warning for all professional journalists that it is best to wait until one is out of harm’s way before exposing corruption and atrocities.

24. Jordan’s experience serves to remind us that our ethical decisions are influenced by the political and emotional climate in which we act.

25. Jordan’s experience serves to remind us that we are often required to make choices for which there is no quick and easy answer.

26. CNN’s need to maintain access to Iraq through visas for reporters and permission from the government influenced Jordan’s decision to withhold information.

27. Jordan was an unscrupulous journalist whose decisions were based entirely on what would be accepted by the American public.
28. Jordan probably would not have withheld the information if he had been convinced that American forces would win the war quickly.

29. Jordan’s decision caused him personal pain.

30. Fear for his own safety was Jordan’s primary concern.
Attachment 6: Student Answer Sheets
(Sheets will be identical for both pre-test and final test, except for test identification at the top of the test.)

**Subject Matter Pre-test Answer Sheet** (change identifier for final test)

Name ________________
Student ID# ___________
Test Score (to be completed by research personnel only) ______

Write your answer in the space provided for each question.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>8</td>
<td>23</td>
</tr>
<tr>
<td>9</td>
<td>24</td>
</tr>
<tr>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>14</td>
<td>29</td>
</tr>
<tr>
<td>15</td>
<td>30</td>
</tr>
</tbody>
</table>
Attachment 6: Student Answer Sheets for Literacy Questionnaire

Answer Sheet

Name ________________
Student ID# ___________
Test Score (to be completed by research personnel only) ______

Write your answer in the space provided for each question.

<table>
<thead>
<tr>
<th>1.</th>
<th>11.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>12.</td>
</tr>
<tr>
<td>3.</td>
<td>13.</td>
</tr>
<tr>
<td>5.</td>
<td>15.</td>
</tr>
<tr>
<td>6.</td>
<td>16.</td>
</tr>
<tr>
<td>7.</td>
<td>17.</td>
</tr>
<tr>
<td>8.</td>
<td>18.</td>
</tr>
<tr>
<td>9.</td>
<td>19</td>
</tr>
<tr>
<td>10.</td>
<td>20.</td>
</tr>
</tbody>
</table>

[Return to discussion of research materials]
Attachment 7: Researcher’s Answer Sheets

Researcher’s Answer Sheet – Subject Matter Knowledge Pre-test

Name __________________
Student ID# ___________

Correct answers follow:

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

Correct answers follow:
### Researcher’s Answer Sheet - Final Test

Correct Answers Follow:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>B</td>
<td>16.</td>
</tr>
<tr>
<td>2.</td>
<td>A</td>
<td>17.</td>
</tr>
<tr>
<td>3.</td>
<td>C</td>
<td>18.</td>
</tr>
<tr>
<td>4.</td>
<td>A</td>
<td>19.</td>
</tr>
<tr>
<td>5.</td>
<td>E</td>
<td>20.</td>
</tr>
<tr>
<td>6.</td>
<td>D</td>
<td>21.</td>
</tr>
<tr>
<td>7.</td>
<td>C</td>
<td>22.</td>
</tr>
<tr>
<td>8.</td>
<td>B</td>
<td>23.</td>
</tr>
<tr>
<td>9.</td>
<td>D</td>
<td>24.</td>
</tr>
<tr>
<td>10.</td>
<td>D</td>
<td>25.</td>
</tr>
<tr>
<td>11.</td>
<td>A</td>
<td>26.</td>
</tr>
<tr>
<td>12.</td>
<td>C</td>
<td>27.</td>
</tr>
<tr>
<td>14.</td>
<td>C</td>
<td>29.</td>
</tr>
<tr>
<td>15.</td>
<td>D</td>
<td>30.</td>
</tr>
</tbody>
</table>

[Return to discussion of research materials]
# Attachment 8: Data Collection Form
## Computer Literacy Questionnaire

<table>
<thead>
<tr>
<th>Student ID #</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
<th>Average Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Compile an average score for each participant by totalling all 20 scores and dividing by 20.*
Data Collection Form - Holster Research
Pre-test on Subject Matter Knowledge

<table>
<thead>
<tr>
<th>Student ID #</th>
<th>In the spaces provided, indicate each student’s score.</th>
<th>Student ID #</th>
<th>In the spaces provided, indicate each student’s score.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student ID #</td>
<td>In the spaces provided, indicate each student’s score.</td>
<td>Student ID #</td>
<td>In the spaces provided, indicate each student’s score.</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------------------</td>
<td>-------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student ID #</td>
<td>Final Test Score</td>
<td>Subject Matter Pre-Test Score</td>
<td>Computer Literacy/Experience Pre-Test Average**</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------</td>
<td>-----------------------------</td>
<td>-----------------------------------------------</td>
</tr>
</tbody>
</table>

*Based upon percentage of improvement in comparison of percentage of correct answers on final test versus percentage correct on subject matter pre-test.

**On a scale of 1 to 10, 1 being no experience, 10 being expert.

Data collected will show student performance when using the scannable or non-scannable pages. Scores of participants using the scannable pages are expected to be at least 25% higher than those of participants using the non-scannable pages.