

# **VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY**

## **Informed consent form for participants of Research Involving Human Subject**

**Title of the Project:** The Effect of Presenting Long Documents on a Large High-Resolution Display on Comprehension of Content and User Experience

**Investigators:** Seungwon Yang and Haeyong Chung

**Faculty investigators:** Dr. Chris North and Dr. Edward A. Fox

### **I. PURPOSE OF THIS RESEARCH**

We are looking at several aspects of the large high resolution display and navigation techniques for reading and understanding long documents to see how they affect user experiences and may improve comprehension of long documents.

The first purpose of this study is to evaluate comprehension of an overall content between three different visualization types for a long document (e.g., Master's theses or doctoral dissertations). The different visualization types include:

- An electronic document on a Gigapixel display (50 tiled LCD monitors)
- An electronic document on a single computer monitor
- Paper copy version of a document on a wide table

The second purpose of this study is to compare navigation task performances between three visualization types mentioned above. In addition, participants' behaviors are observed to see if there appear any patterns. To this end, both objective and subjective measures of qualitative data will be collected. The findings from this study will provide useful information on requirements and criteria for future ETD research.

### **II. PROCEDURES**

The study will take place at The Center for Human-Computer Interaction (Department of Computer Science) in Knowledge Works II building in Corporate Research Center. At least 18 (at most 24) participants will participate in this study. Upon arrival, there will be a brief explanation session for the study protocol and procedures. If you choose to participate in this study, you will be asked to sign the informed consent form (this document). You will keep a copy for yourself. Prior to the experiment, you will be asked to complete a demographic form, which will help the researchers categorize the data to make comparisons as needed.

There will be a few practice sessions to make sure that all participants get familiarized with navigating on the visualization type assigned. After that, you will begin reading a document that

has about 50 pages on the visualization space assigned to you. Approximately an hour will be given for this reading. Upon completion, multiple navigation tasks will be provided to you. You should answer for each task by finding or comparing information in the document. After finishing the tasks, you will be asked to write one or two paragraphs that summarize the document using a PC. Task completion time as well as navigation behaviors will be measured and video-recorded for further analysis. This is not to evaluate individual performances but to measure the effect of different visualization spaces on performances. A post questionnaire will be given to collect your experiences while performing the tasks, followed by a semi-structured interview for more detailed experience collection. The experiment will last approximately 90-110 minutes. However, you are welcome to take breaks as needed.

### **III. RISKS**

This experiment is an evaluation of comprehension and navigation technique for large displays for long documents. Participation involves standing, moving around the area in front of the large display, and manipulating electrical documents with touch screen interfaces. The physical components of the task previously described may result in leg or arm fatigue.

If you experience any leg or arm fatigue during the task, please inform the experimenter. You are free to rest, during which the stopwatch measuring your time on the task will be paused, and may continue when you are ready. If the fatigue becomes uncomfortable, you will be allowed to leave with no penalty.

### **IV. EXTENT OF ANONYMITY AND CONFIDENTIALITY**

This research will assure your confidentiality. We will have your signatures on the Informed Consent document. However, this document will be kept in a locked cabinet for 5 years and your name will not be released. At the end of the 5-year period, we will destroy the documents. Your name will not be associated with the content of this observation, but you will be assigned a three-digit number to protect your privacy. Your number is \_\_\_\_\_.

All data will be collected by the researchers only. No one other than the researchers will have access to the data. We will use digital camcorders so we can analyze the experiment in a later time. This is important so we don't miss critical information. As you will be given a 3-digit number above, we ask that you refer to yourself by this 3-digit number and please do not refer to any other participants by name. All responses will be coded so as not to include the name of the participant. The information you provide will have your name removed and only a three-digit participant number will identify you during analysis and any written reports of the research.

This study is being conducted solely for research and development purposes, and the resulting data and interpretations will also be the part of the researcher's academic work. Consistent with these academic purposes, any results would be freely publishable. However, to protect your identity, personal names will not be used in any published works. We are willing to share drafts of reports with you before submitting them for publication.

## **V. COMPENSATION**

You will receive a \$5 Starbucks gift card.

## **VI. FREEDOM TO WITHDRAW**

Participation in the study is voluntary and the decision on whether you wish to participate or not is strictly your own. You may discontinue participation at any time. However, the compensation will be given to those who complete the experiment.

## **VII. APPROVAL OF RESEARCH**

This research project has been approved by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University and by the Department of Industrial and Systems Engineering (College of Engineering).

## **VIII. PARTICIPANT'S RESPONSIBILITIES**

Upon signing this form, I voluntarily agree to participate in this study. I have no restrictions to my participation in this study. As a participant, I may withdraw from this experiment at any time without penalty. I agree to abide by the rules of this project.

## **IX. PARTICIPANT'S PERMISSION**

I have read and understand the Informed Consent and conditions of this study. I understand that the experiment will be videotaped to support data recording. All of my questions have been answered. I agree to participate in this experiment.

\_\_\_\_\_  
Participant's Signature

\_\_\_\_\_  
Date

Should I have any questions about the research or its conduct, I may contact:

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