

**EXEMPT EDUCATIONAL, BEHAVIORAL, AND SOCIAL SCIENCE RESEARCH
SECTION I**

1. Status:

New Submission

2. Title of Protocol:

Identifying new and obsolete usability heuristics for web-based business software

3. Responsible Personnel:

A. Principal Investigator (PI):

Fruhling, Ann - School of Interdisciplinary Informatics - 4025544968 -
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B. Secondary Investigator (SI):

Lechner, Bettina - ISQA - 4025546042 - blechner@unomaha.edu - degree: n/a
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C. Participating Personnel:

Petter, Stacie - Information Systems & Quantitative Analy - 4025542077 -
spetter@unomaha.edu - alt #: -- - degree: Ph.D. - address: - phone:

Siy, Harvey - Computer Science - 4025542834 - hsiy@unomaha.edu - degree:
Ph.D. - address: - phone:

D. Lead Coordinator:

E. Coordinator(s):

F. Data/Administrative Personnel:

G. Are you a student?

No

4. Funding Source:

Check all that apply and provide the source of the funding.

Other - Provide source: personal funding

5. Funding Agency Deadline for IRB Approval:

No

6. Study Sites

Provide the names and locations of all study sites where this research will be conducted under the oversight of the UNMC IRB or the Joint Pediatric IRB. Submit a letter from an authorized official at all external performance sites other than UNMC, TNMC, UNO or CH&MC granting permission to conduct the research at that site.

UNO Peter Kiewit Institute

7. Principal Investigator Assurance

The Principal Investigator understands and accepts the following obligations to protect the rights and welfare of research subjects in this study:

- I certify that I have carefully reviewed this application and all supporting documents. I have determined that the application is accurate, complete and ready for submission to the IRB.
- I recognize that as the PI it is my responsibility to ensure that this research and the actions of all research personnel involved in conducting the study will comply fully with the IRB-approved protocol and HRPP policies.
- I certify that all listed research personnel will be given a copy of the final IRB approved application and any other relevant study related documents in accordance with their defined responsibilities.
- I recognize that it is my responsibility to ensure that valid informed consent/assent has been obtained, as appropriate, from all research subjects or their legally authorized representative (LARs).
- All listed study personnel have completed the IRB required CITI Training.
- I will not initiate any change in protocol which may change the exempt status of this study without IRB approval.

- I will maintain all required research records on file and I recognize that the IRB is authorized to inspect these records.
- I will inform the Office of Regulatory Affairs (ORA) immediately of any research related problems which impact the subjects.
- I understand that IRB approval is valid for a maximum period of five years.

Fruhling, Ann - May 10 2012 3:02PM

SECTION II

PURPOSE OF THE STUDY AND BACKGROUND

1. Purpose of the Study

What are the specific scientific objectives of the research?

The aim of this study is to identify new and obsolete usability heuristics for web-based business software. To this end, existing usability heuristics for different types of systems will be evaluated with regard to their relevance to modern web-based business software. In addition, new heuristics will be developed as needed.

2. Background and Rationale

Describe the background of the study.

There are a number of established and tested usability heuristics which have been developed for desktop applications or software in general.

Web applications, however, have a number of limitations and likewise advantages that differentiate them from traditional desktop applications. Limitations include differences in the implementation of web browsers resulting in differently rendered interfaces, a lack of platform- and browser-independent keyboard short-cuts, and varying network speeds affecting load time and performance. Examples of benefits are the ability to collaborate with other users in real-time, as well as an easy method of managing updates and distributing new functionality.

While there is some research investigating usability heuristics for web sites and web applications, these heuristics are of general nature and do not focus on web-based business systems.

On the other hand, it has been recommended that general heuristics be complemented by heuristics specific to the domain they are to be applied to, since general heuristics are likely to miss domain-specific problems (Rusu, 2011). While there are heuristics and guidelines available for web sites, they are not geared toward web-based business systems.

CHARACTERISTICS OF THE SUBJECT POPULATION

3. Accrual

A. What is the number of subjects that must complete the study in order to achieve the scientific objectives of the research?

A total of 10 participants in two groups of 5 each is expected to be sufficient for

this study. One group will participate in a pilot study, the other two groups will participate in the actual study.

B. What is the statistical or other justification for the number of subjects needed to complete the study?

Nielsen (1993, p. 156) recommends including five to six evaluators in a heuristic evaluation, since a group of this size is expected to find about 75% of usability problems. It is reasonable to assume that a group of participants of this size can also be expected to identify a large part of heuristics relevant to an application area.

C. What is the maximum number of subjects that will be participating in this research study at all sites under the oversight of the UNMC IRB OR THE JOINT PEDIATRIC IRB and what is the justification for this number?

The maximum number of subjects in this study is 15, since no more subjects will be needed and recruited.

4. Gender of the Subjects

Are there any enrollment restrictions based on gender?

No

5. Age Range of the Subjects

A. What is the age range of the adult subjects?

The minimum age for subjects to participate in this study is 19, there is no upper limit.

B. What is the rationale for selecting this age range?

Subjects should be at least of majority, but any person older than that is eligible to participate, given they fulfill other criteria.

C. Will children (18 years of age or younger) be included in this research?

No

What is the justification for excluding children from this research?

Participants in this study must usability experts in academia or industry, or have significant experience in using web-based business software. Children are not eligible.

6. Race and Ethnicity

Are there any subject enrollment restrictions based upon race or ethnic origin?

No

7. Inclusion Criteria

What are the specific inclusion criteria?

Participants will be recruited into two groups. The first group will consist of usability experts from academia or industry. The second group will consist of users of web-based business software with at least one year of experience with using such a system.

METHODS AND PROCEDURES

8. Description of Procedures

A. Describe the procedures, evaluations and/or tests that will be done.

Since the subjects will be assigned to one of two groups, two focus group studies will be held. Each subject will participate in one of the two focus group studies.

First, the participants will be asked to review a list of usability heuristics provided to them and assign a rating to each heuristic. This rating allows them to specify how applicable they think each of the heuristics is to web-based CRM systems.

Second, they will be asked to brainstorm any ideas for heuristics they think need to be added to account for web-based CRM systems.

Third, they will be asked to join a group discussion to discuss potential points of conflicting opinions about the heuristics. Their oral comments and the oral comments of the other participants will be recorded during this part of the study to allow for better analysis. The comments will only be recorded if all participants agree to be recorded.

Information about the participants' years of experience in the IT field will be collected to gauge their level of expertise. This information will be linked to the participants' responses during the study, but not to any personally identifying information.

B. Does the research involve review of identifiable private information, including information from public or other registries or databases?

No

9. Confidentiality

Where will the research data be stored during the study and how will it be secured?

The research data will be stored on the researchers' computers. No personally identifying information will be stored with the research results.

10. Privacy

How will you ensure that the privacy is protected during recruitment and in ongoing interactions with participants?

Only participants and investigators will be allowed to access these rooms during the time of the study. No personally identifying information will be stored with the research results.

RISK/BENEFIT ASSESSMENT

11. Potential Risks

Are there any potential risks associated with the research procedure, intervention, evaluation and/or test?

Yes

Describe.

There is a possible risk of a loss of confidentiality.

12. Potential Benefits to the Subject

Are there potential benefits to the subjects that may reasonably be expected from participation in the research?

Yes

Describe.

Usability experts may find the resulting set of usability heuristics valuable in their work as they develop or evaluate web-based business software for purchase. All participants will be sent a copy of the final report should they be interested in it.

13. Potential Benefits to Society

What are the anticipated benefits (i.e. value) to society that may reasonably be expected to result from this research?

The results of this study will add to the existing body of usability heuristics and provide a set of heuristics tailored to the expanding class of web-based business software.

For practitioners, gaining a better understanding of the heuristics relevant to web-based business software will allow for the creation or selection of systems with greater usability, which can lead to benefits such as increased productivity and customer satisfaction.

The study will close the gap in usability heuristics for web-based business software. In addition, the study will contribute to research by increasing our understanding of the emerging field of web-based business software and how heuristics apply to it.

FINANCIAL COMPENSATION

14. Compensation to the Subject for Participation

Will the subject receive any compensation for participation?

No

SUBJECT IDENTIFICATION, RECRUITMENT AND CONSENT/ASSENT

15. Method of Subject Identification and Recruitment

A. How will prospective subjects be identified (e.g., previous research participants, class rosters, databases)?

Usability experts will be identified through personal contacts of the researchers. Users of web-based business software will be identified through personal contacts of the researchers and the usability experts (snowball sampling).

B. Describe how the principal, secondary investigator, participating personnel have ethical access to the names of potential subjects or how these names will be obtained?

Participants will be identified through existing personal contacts.

C. How will prospective subjects be contacted for recruitment into the study?

The participants will be contacted through personal e-mail, phone calls, or personal communication.

16. Informed Consent

Will informed consent be obtained from prospective subjects?

Yes

A) Describe the process of informed consent.

Before the studies begin, a written narrative will be read to the participants detailing the research.

B) Indicate and submit the form(s) to be used for the research.

Written narrative of information to be orally conveyed to the subject

EXEMPTION CATEGORY

17. Exemption Category

A) Specify the exemption category [1-6] under which this protocol should be classified.

2

LITERATURE REVIEW

18. References

Provide a full listing of the key references cited in the background (Section II.3). The references should clearly support the stated purpose of the study.

Nielsen, J. (1993). *Usability Engineering*. Academic Press, San Diego, CA.

Rusu, C., Roncagliolo, S., Rusu, V., and Collazos, C. (2011). A methodology to establish usability heuristics. In *The Fourth International Conference on Advances in Computer-Human Interactions*, pages 59–62.

SECTION III

SUBMISSION DEADLINE

EXEMPT REVIEW: Applications that qualify for exempt review have no submission deadline and can be reviewed independent of the IRB meeting schedule. The ORA reserves the right to reclassify applications and/or refer those applications for either expedited review or full board review as appropriate. In some cases, investigators may be asked to resubmit the project using the IRB Application for Behavioral and Social Science Research.

Call the Office of Regulatory Affairs for assistance in determining if your study meets the requirements for exempt review.

SUBMISSION CHECKLIST

Check all that apply.

Subject recruitment material

Copy of all questionnaires, surveys, assessment tools, and other relevant materials

ADDITIONAL REVIEW REQUIREMENTS

Final IRB approval and release of studies is contingent upon approval by the following UNMC committees or departments. Check the appropriate boxes:

No Additional Reviews Required