IAT804 Assignment 2: Short Paper Assessment

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ABSTRACT

The goal of this document is to identify and analyze the methodological approaches, research designs, data collection and analysis methods of [1] in less than 1600 words. It serves as a report for IAT804 course of SIAT SFU. *TODO: summarize all in here*

Author Keywords

Research Methodology; Research Designs; Assessment; HCI; Intuitive Interaction; Natural User Interfaces

WORLD-VIEW

The abstract of the document literally commences with a statement about addressing the issues and challenges of natural user interface designers. The positioning of these statements alongside the essence of conclusion section shows us that the authors are following a "**Pragmatic World-view**".

RESEARCH DESIGN AND METHODOLOGY

It is explicitly stated in the abstract that [1] uses an "**Exploratory mixed method**" research design. Reviewing the text also supports this claim about; they conduct a series quantitative experiments followed by different open-ended reviews and questionnaires. Their method of data collection is also a mixture of qualitative and quantitative methods. They are also both interested in answering the qualitative question of how to improve designers experience in natural user interfaces, as well as exploring the quantitative statistical comparisons of usability, intuitive interactions and awareness. Therefore we can safely conclude that this study is using a "**Mixed method design**" with an "**Exploratory comparative methodology**." It also uses a "**Between-subjects experiment design** to conduct the experiments in the quantitative phase.

DATA COLLECTION METHODS

This study collects quantitative data in a series of between-subject **experiments** (task completions) and collects task-completion times from them. It also uses **questionnaires** between some of these tasks to obtain Likert values for responses. Basically it uses different scales and established measurement systems to quantify the outcomes of each experiment.

There is also qualitative data collection in form of **interviews** with open-ended questions, **observational notes** and **video recordings** from the experiment sessions.

USE OF THEORY

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VALIDITY

There are some internal threats to the validity of this study. It is mentioned that the majority of the participants (seventy-two percent) were chosen from the university students [1]. It is also mentioned that most of the participants were daily users of computers and smart-phones. All of these factors introduce an internal validity threat in form of **selection of participants**. This threat has not been properly addressed in the paper. Unfortunately this distribution can also result in an **external interaction of selection and treatment threat** which may prevent the study from being generalized to a wider population.

Another internal threat could be **Testing** threat in which the familiarization of the participants with the instrument may affect the outcomes. Fortunately by proper timing of the tasks and interviews and also sequentializing the nature of the experiments, researchers have addressed this issue in an ample manner.

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REFERENCES

[1] Anna Macaranas, Alissa N. Antle, and Bernhard E. Riecke. 2015. What is Intuitive Interaction? Balancing Users' Performance and Satisfaction with Natural User Interfaces. *Interacting with Computers* 27, 3 (02 2015), 357–370. DOI:`http://dx.doi.org/10.1093/iwc/iwv003`