

# The need for qualitative methods in online user research in a digital library environment

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## ABSTRACT

Online users of digital libraries are multi-local, multi-lingual and live in multiple time-zones. Getting "purposeful data" in online user research requires that the research be done online because the users are there. This content analysis looks at a broad sample of international publications to address the following two research questions: 1) what methods do we use for online user research and 2) what are the purposes behind the research questions? The poster suggests that we currently use methods that match poorly to the purpose of the study and that there is a real need to use qualitative methods to study online users to be able to produce purposeful data.

## Categories and Subject Descriptors

H.3.7 [Digital Libraries] : User Issues

## General Terms

Measurement, Human Factors

## Keywords

Digital Library, Qualitative Methods, User Research, Research Design

## 1. INTRODUCTION

Online users of digital libraries are multi-local, multi-lingual and live in multiple-time-zones. If we build up a digital library based on results from a focus group with local users, the results may not represent the real future users. In studying online usage, we can no longer rely only on local users. Getting "purposeful data" (in Troll Covey's sense of the word) in online user research requires that the research be done online because the users are there. Not all methods are currently used online. Focus groups can be difficult to do online, as are interviews and ethnographic observations. Structured surveys and log file analyses are, on the

other hand, widely used for online studies. The proposed poster presents a content analysis of user research drawn from published articles and dissertations revealing that log file analyses and surveys are the primary methods used for online research.

## 2. RELATED WORK

Most of the research on users and digital libraries analyzes one digital library and its users. The number of publications on specific methods is limited. Edgar [1], Homewood [2], Xia [3], and Nicholson [4] discuss general research design issues and do not map methods to purposes. Studies like "The virtual scholar: the hard and evidential truth" [5] try to draw a general picture of online users. The poster's content analysis grows out of Troll Covey's study [6] that addresses the relation of purposes and methods in online user research. She undertook interviews with participants from the Digital Library Federation (DLF) about their use of and experience with methods in user research and concluded that "Libraries are struggling to find the right measures on which to base their decisions. DLF respondents expressed concern that data are being gathered for historical reasons or because they are easy to gather, rather than because they serve useful, articulated purposes."

## 3. RESEARCH DESIGN

Purposeful data results from an expressed purpose in combination with an adequate method. Data gathering is an essential part of online user studies, and every method has its areas of application and its limitations: quantitative surveys are limited in their ability to detect causal relations; with qualitative interviews broad generalizations are risky. This poster looks at a broad sample of international publications to address the following two research questions: 1) what methods do we use for online user research and 2) what are the purposes behind the research question? The content analysis follows the thematic coding in Hopf [7]. This study extends Troll Covey's work by correlating the findings with new variables such as whether the research has taken place offline or online and whether the result fits the purpose. The 70 publications that have been taken into consideration contain applied user research in a digital library environment and examine only online services. The databases DABI, E-LIS, DissOnline, ProQuest and LISA served as the sources.

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#### 4. RESULT ANALYSIS

Because of space considerations, only one result from the analysis will be presented in the poster. Only in 21% of the cases did researchers use a qualitative method (focus groups, interviews or observations) – more than double that number used surveys. Methods like interviews or focus groups currently take place nearly entirely offline. Only one of the studies used an online interview. Qualitative methods traditionally require human-to-human communication – for example the interviewer and the interviewee – to be able to reformulate a question or to respond to a specific answer in order to get deeper insights into behavior. An example of qualitative research in usability engineering is the construction of personas and scenarios for a digital library – for both, deep insight into sample users is needed, not the whole population. Quantitative methods may be used afterwards to check if the personas or the scenarios match the population. Despite artificial intelligence experiments, machines currently cannot be programmed to conduct unstructured interviews on their own – for example a chat system always needs a human behind the machine. The problem is that quantitative research designs require knowledge about the user's context to be able to ask the right questions and to interpret the data in the right way. Do closed answer-sets offer the options that users would provide or only the questioner's perspective? Can log files be analyzed without knowing the full social context of the users' actions? If most people select new offerings, does this mean that they want that particular information or are merely browsing? The poster's analysis shows that surveys are used for many more purposes than all the other methods and that they are used as an all purpose research tool for need assessments, user typologies, perception studies, satisfaction testing – even testing usability.

#### 5. CONCLUSION

Although researchers may use quantitative methods, they tend to articulate purposes like user typologies or need assessments that implicitly demand qualitative methods with an interactive human presence. If the purpose is to know users and the context in which they use a digital library, human-mediated inquiries need to substitute surveys and log file analysis. As Notess says: "Part of the problem is that the log files do not tell us anything about user

motivation or rationale. For instance, we noted that only 11% of user sessions used bookmarking. But we do not know why the other 89% did not make use of this feature." [8] The poster suggests that current methods tend not to match the intended purpose of user studies study and that there is a real need for qualitative data in online user research.

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