Hybrid Online Survey System with Real-Time Moderator Chat

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Hybrid Online Survey System with Real-Time Moderator Chat

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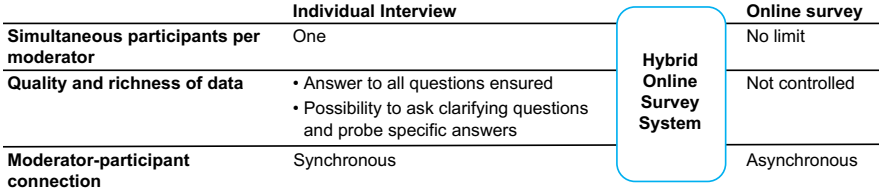

Figure 1: The hybrid survey system aims to to fit between individual interview and online survey methods.

ABSTRACT

Online surveys present a quick and efficient method to collect user experience data. However, they are less effective at extracting qualitative data. Due to response fatigue when answering open-ended questions, the quality of responses may be poor, and participants can skip answering individual questions, or drop out from the survey entirely, potentially introducing bias. To address these challenges, we developed a prototype tool that enables a test moderator to initiate a chat intervention with a participant at any point during the completion of an online survey. Through this approach, participants can be prompted to return to complete unanswered questions or provide clarification to given answers. A functional prototype system has been implemented and, as future work, will be evaluated with a variety of content and question types.

CCS CONCEPTS

• **Human-centered computing → Systems and tools for interaction design**.

KEYWORDS

online surveys, chat, qualitative surveys

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1 INTRODUCTION AND BACKGROUND

Online surveys are a common method in user experience (UX) research and can be a rapid and inexpensive method to collect data [9], see Figure 1. However, online surveys have limitations in the type of data that can be reliably collected and in the potential for bias in the collected data, e.g. the population answering the survey is not tightly controlled [2]. In particular, Story and Tate (2019) highlight the potential bias introduced by non-responders [12].

Closed-ended questions, including multiple choice and rating scales, are the primary type of questions used in online surveys, as they are quick to complete and easy to analyze. To extract qualitative data from survey respondents, open-ended questions are required, however, they are often poorly answered due to response fatigue. If a survey takes ten minutes to complete, 20% of respondents will drop out from the survey before completing it [5]. Zwarun and Hall [13] reported that about 30% of respondents reported several forms of multitasking behavior while answering an online survey. However, with correct planning, Braun et. al, report positively on the use of online surveys as a qualitative research tool [4]. Compared to interviews, online surveys lack an interviewer to guide the respondents toward the issues of interest when open-ended questions are asked [3]. In their introductory guide to online surveys, Survey Monkey [8] highlight that the lack of a moderator to answer clarifying questions can lead to data unreliability.

Text chat, using, e.g WhatsApp, has been used as a tool for conducting online interviews, e.g. [1, 7, 11] Kaufmann et al. highlight the benefit of accessing participants in the context and time of interest [7]. Oates et al. [10] compared five different interview modes, including audio, video, survey, and chat, and reported little difference in the results or participant experience between the modes.

2 HYBRID SURVEY CONCEPT

The hybrid survey concept aims to improve the quality of data collected through online surveys through the inclusion of moderator intervention. Through this, the utility of the online survey for collecting qualitative data can be enhanced, and the potential bias from lack of completion may be improved. The concept aims for higher efficiency than a one-to-one interview, by allowing the survey moderator to support multiple participants simultaneously.

Currently, commercial systems in customer service contexts are available that provide restricted combinations of surveys and chat methods, e.g. as a pre-chat or post-chat survey to a human or chatbot exchange. In contrast, we target a system that enables the

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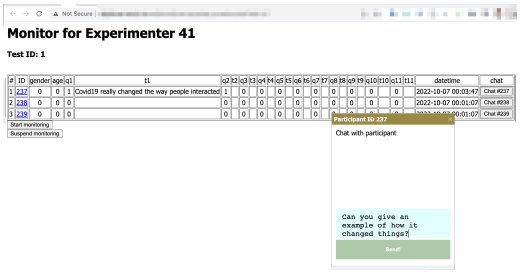

Figure 2: The moderator's view of the Hybrid Survey Concept. The image shows the case with three participants currently active. Participant 237 has completed question 1, and the moderator has launched a chat requesting clarification on the answer.

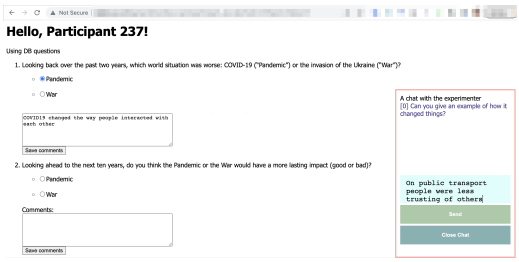

Figure 3: Participant 237's survey view. The participant completed the multiple choice question 1, after which the moderator opened the chat requesting an example to illustrate the participant's response.

moderator to make chat interventions at arbitrary points during survey completion while retaining a summary of the overall survey progress to provide context. This required the design of a custom solution.

We envisage that the following types of moderator chat interventions should be enabled:

- Clarify an answer (either rating scale or text answer)
- Verify/reconsider an answer 'Are you sure?'
- Prompt to fill an unanswered / briefly answered text response
- Ask a comparison between 2 given answers
- Ask a completely new question

3 PROTOTYPE IMPLEMENTATION

To validate the concept, an initial implementation was developed using an open-source LAMP stack (Linux, Apache, MySQL, PHP). The front-end interface was developed in javascript and survey questions and responses were stored in the MySQL database. The system provides the moderator with a monitor view to track multiple participants completing the survey simultaneously (Figure 2). At any time the moderator is able to start a chat session with any participant to extract further data, e.g. request clarification of a response. For the participant, the survey itself looks like a standard survey form with a chat window at the bottom right (Figure 3). The participant is also able to initiate a chat with the moderator at any time, should they require clarification on a question. The transcript of the survey chat is time-coded and saved in secondary storage for later analysis. The developed system also includes the necessary functionality for the moderator to plan upcoming survey sessions and generates emails to participants with links to begin the survey at the planned start time.

4 DISCUSSION AND CONCLUSION

We have presented our ongoing research on a user research tool that aims to enhance online surveys through the inclusion of a text chat interface to a moderator. As the next steps, we plan to evaluate the hybrid survey system with a variety of different survey content. In particular, we aim to:

- identify the types of questions, or question combinations, that can gain the most benefit from the hybrid survey system, to provide higher quality data.
- identify the needed moderator documentation to support the semi-structured process without introducing experimenter bias.
- establish the approximate number of participants that can be simultaneously supported by a single moderator.

Whilst the addition of the moderator-participant chat channel provides the potential to increase the richness of the data, it also increases the potential for researcher bias. To address this, when designing a study utilizing this approach, attention should be paid to the large body of prior work providing guidance on the design of semi-structured interviews to avoid bias, e.g. [6].

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