

Prototypes, Platforms and Protocols: Identifying Common Issues with Remote, Unmoderated Studies and their Impact on Research Participants

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ABSTRACT

Remote, unmoderated research platforms have increased the efficiency of traditional design research approaches such as usability testing, while also allowing practitioners to collect more diverse user perspectives than afforded by lab-based methods. The self-service nature of these platforms has also increased the number of studies created by requestors without formal research training. Past research has explored the quality and validity of research findings on these platforms, but little is known about the everyday issues participants face while completing these studies. We conducted an interview-based study with 22 experienced research participants to understand what issues are most commonly encountered and how participants mitigate issues as they arise. We found that a majority of the issues surface across research platforms, requestor protocols and prototypes, and participant responses range from filing support tickets to simply quitting studies. We discuss the consequences of these issues and provide recommendations for researchers and platforms.

CCS CONCEPTS

• **Human-centered computing** → **User studies; Usability testing.**

KEYWORDS

usability testing, remote research, unmoderated testing, participant experience

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1 INTRODUCTION

With the rise of remote and hybrid work, the day-to-day work of industry research practitioners is increasingly transitioning to online research platforms. These tools allow researchers to rapidly design, execute and analyze a variety of research—including design research with on-device prototypes—without the complexities of scheduling and facilitating in-person studies. These platforms also include a more economically and politically diverse sample of participants than might be possible to find in cities like San Francisco or New York. Given the self-service approach to these platforms, it is not uncommon for development teams to create studies without the support of a dedicated researcher [1, 5, 6].

Research that once took weeks to complete can now be conducted in a matter of hours, and researchers who were traditionally tethered to physical infrastructure such as usability labs can now complete their work from anywhere with an internet connection. The benefit of this flexibility for practitioners has become particularly salient in the aftermath of the COVID-19 pandemic, during which many labs completely halted in-person research and needed to rethink how to conduct research in an online-only world.

The flexibility and efficiency of these online research tools is dependent upon panels of on-demand participants who seek out and complete studies as they become available. For this set of end-users, the user experience is determined not only by the quality of the research platform's software, but also the quality of study protocols and design prototypes provided by requestors. Issues such as technical glitches with the study platform, faulty prototypes or confusing protocols can disincentivize participants' future participation and lower data quality for researchers. Ultimately, it is to the benefit of all stakeholders in this ecosystem to ensure that participants have a high-quality experience.

Despite the prevalence of remote, unmoderated testing platforms in industry settings, there is little published research about the end-to-end user experience of participating in a study facilitated by these tools from the participants' perspective, particularly as it relates to traditional design research such as usability testing.

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We wanted to better understand the types of issues participants experience at the intersection of these study platforms, protocols and prototypes. In this paper we present an exploratory interview study from the perspective of 22 frequent research participants who have previously encountered issues while completing online studies. We wanted to understand:

- What types of issues do participants encounter?
- What actions, if any, do participants take when encountering these issues?
- How has their approach to dealing with issues changed over time, if at all?

We extend the literature on the participant experience in two ways. First, we provide an updated understanding of common issues and pitfalls users experience when participating in online design research, and how participants mitigate those issues. Second, we provide recommendations both for the design of online study platforms and for practitioners conducting studies to improve the user experience of their research. Based on our data, we found that many of the most common issues experienced by participants are easily preventable, and that many experienced participants have developed strategies for working through the most common issues.

2 RELATED WORK

Researchers have previously studied the demographic makeup, motivations and behaviors among participants in on-demand research platforms. Keusch et al. [9] found that participants' top motivations for joining online panels include earning extra money, curiosity about online research and wanting to contribute to better products and services.

Bentley et al. [3] explored differences in demographic and behavioral responses across ten popular survey platforms, including Mechanical Turk and Survey Monkey, finding that population representativeness and response quality varied significantly depending on the platform. And Schirra and Allison [12] studied conditioning effects among participants in online usability panels, finding that participants' contributions to design research studies improved over time as they internalized the nuances of think-aloud protocols and the technical limitations of research platforms.

Amazon Mechanical Turk is a crowdwork platform that has been widely studied from a variety of ethical angles related to online research, including participant gratuities and compensation (e.g., [13]) and dispute resolution [8]. Irani and Silberman [8] surfaced that many users felt their submissions were often unfairly or arbitrarily rejected, and discussed Turkopticon, a system that allows users to rate MTurk requestors in a variety of categories, including communication and fairness, and also leave testimonials that can be seen by other users—serving as a warning to other participants to flag poorly designed and executed research.

The prevalence of self-service research platforms has also been a topic of controversy in the UX research practitioner discourse as critics consider the effect these platforms may have on research quality. While some argue automated platforms may usher in the “democratization of research” among research adjacent roles such as product marketers (e.g., [7]), Barnum [1] wonders whether “this inclusive approach results in a dilution of the practice of UX” (p.4). Similarly, Buhle [5] cautions that the focus on research automation

and efficiency within organizations had led to a lack of focus on study quality, arguing that researchers “have an obligation to rigorously interrogate the hypothesis that conducting great usability research is simple” (p. 154).

The current study furthers the discourse around the participant experience, particularly in the domain of remote usability testing, and provides guidance on improving study quality through the perspectives of the study participants themselves. We explored the breadth of issues experienced by participants—and their remediation strategies—by focusing on participants who use these online platforms frequently.

3 METHODOLOGY

Data for the study was collected via a series of remote, unmoderated structured interviews (e.g., [4, 11]), conducted asynchronously through an online study platform that provides on-demand participants. Before the study, participants completed an informed consent process. Next, they began the structured interview, responding to a series of open-ended questions recorded through the study platform's audio recording capabilities, allowing participants to describe their past experiences in their own words. These questions asked participants, for example, to describe the last time they encountered an issue while participating in an online study, and what actions they took in response to the issue. We also asked participants to describe whether their strategies for responding to issues have changed over time. Participants then uploaded their verbal responses to the study platform for analysis. The resulting interviews were about 10-15 minutes in length, and all participants were compensated for their time.

3.1 Participants

A total of 22 participants completed interviews. Participants were diverse with respect to age (19–62, mean=38, SD=13) gender (10 female, 10 male and 2 non-binary participants) and primary device for participating in research (11 smartphone, 11 desktop computer). To ensure participants had enough “problem” instances to discuss, a key inclusion criteria was including participants who had completed at least 50 studies on any platform, and had been participating in online panels for at least 6 months (though some had up to 5 years of experience). Despite having this minimum requirement, our sample included a diverse range of experience, with some participants having completed more than 500 studies, while others had completed only 50.

3.2 Analysis

We employed a team-based, grounded-theory affinity analysis (following [2]) to analyze the participant interviews. Participant interviews were transcribed, then all verbatim quotes from participants relevant to our research questions were extracted for analysis. These selected comments were printed as pieces of data on 453 individual Post-It notes.

The researchers collaboratively analyzed these individual quotes as part of an affinity diagramming exercise in multiple phases. First, the data was grouped based on broad similarities (e.g. data related to research platforms, motivations to participate, etc). We then created base-level clusters of data based on observed similarities and labeled

them by theme, with the themes emerging inductively from the data. Multiple base-level clusters were grouped by relatedness to form second-level themes, which were also summarized with an explanatory label. Finally, we created our highest-level themes, ultimately containing multiple data-points across multiple, diverse participants—though only a subset of representative quotes are presented in this paper due to space constraints.

4 FINDINGS

Our findings center on issues encountered across three domains: platforms, protocols and prototypes. Below we summarize the issues described by participants, including example participant quotes for each theme.

4.1 Platform-based issues

Participants described a variety of technical issues with the user study platforms themselves, some of which impacted their ability to successfully participate in or complete studies. Note that some study types effectively daisy-chain multiple platforms together, and participants may qualify for study on one platform, then take a study on one or more additional platforms, increasing the potential to encounter issues.

4.1.1 Study was interrupted. After qualifying for a study, participants may experience technical issues that prevent them from completing it. Key issues include:

- **Audio or visual issues, preventing the participant from hearing or seeing the study**
 - P12: “...the worst issue I’ve experienced was that I just continually kept dropping off the call.”
- **The platform glitching, preventing the participant from advancing**
 - P10: “...a video does not load properly and you can’t move on, like it doesn’t play the video and it depends on the video reaching the end for the arrow to pop up and for you to move on.”
- **The platform freezing or crashing altogether**
 - P7: “I’ll use different companies’ recording apps and sometimes the apps will quit.”

As explained by P11, in some instances these issues not only waste the participants’ time, but may also cause them to ultimately not receive payment, and on occasion prevent participants from enrolling in another study, since the platform had not yet disenrolled the participant from the previous study.

4.1.2 Study could not be submitted. The final step in many remote, unmoderated study platforms involves uploading and submitting an audio or video recording to the online platform. This can be a precarious moment for the participant who has now finished providing feedback, but needs the platform to accept their submission. Participants described instances of reaching the submission phase, yet being unable to properly submit their responses due to a technical issue.

- P5: “I think the worst issue that I’ve experienced is when you’ve put a lot of time and effort into your responses and then when I’m not able to submit that.”

4.2 Protocol-based issues

Issues with the study protocol were among the most common reported by participants. These issues can arise when the researcher designing the study leaves out critical information, presents information in an unclear way or has not properly quality-checked the final study before providing it to participants.

4.2.1 Issues accessing the required prototype. Many of the studies our participants completed were in the domain of remote unmoderated usability testing, where participants need to interact with a design or prototype. One of the most commonly cited issues among participants was difficulty accessing the required prototype as presented in the protocol.

- **The prototype link in the protocol was broken**
 - P19: “I’ve had prototypes that have contained bad links. They try and open a required screen in another tab or another window, and I get a 404 or a 500 or some other error, or it just won’t open, or it just times out.”
- **The prototype was password-protected, and the password was not provided in the protocol**
 - P20: “When I can’t log into the prototype, that’s also, um, you know, the fault of whoever made the prototype... when it’s asking for a login and I’ve not been given login information. Um, those to me are usually the worst issue that I deal with.”

4.2.2 The protocol directions do not match the prototype. In unmoderated studies, participants rely upon pre-written instructions from the requestor to progress with the study and explore the prototype. Issues arise when there is a mismatch between what the requestor is asking participants to do and the capabilities of the prototype.

- **The instructions do not correctly correlate with the current state or capabilities of the prototype**
 - P6: “It just became more and more clear to me that the questions weren’t lining up with the prototype I was, I was looking at. So that was pretty frustrating.”
- **The steps or instructions related to the prototype workflow are presented out of order**
 - P19: “Sometimes I’ve seen them out of order. I go to a step and it says, no, do this. I’m like, wait a minute. This is the next step, not the current step. So I click next and it’s the prior step.”

4.2.3 The protocol is poorly or confusingly written. In addition to problems with access, participants report that the wording of the protocols themselves can make completing studies challenging.

- **The study directions are not clearly written and are difficult to understand**
 - P6: “Another thing I think that can happen is sometimes the directions just don’t make clear sense and I’m not sure if I’ve done what I’ve been asked to do.”
- **The study contains grammar and spelling errors that lead to confusion**
 - P14: “I think sometimes the poor wording or phrasing... you know, they’re doing the best they can, but because English may not be their first language, it’s more of a challenge for a native English speaker, you know, to read or understand, you know, what they wrote.”

4.2.4 Screener lacks critical information. The participant screening process is an important step in onboarding participants. On most platforms, participants need to successfully pass the screening process to complete the study and qualify for payment. Participants also use this screening process to understand the context for the study, and what is expected of them. Participants noted three pain points with screeners:

- **Unpaid disqualification from a study after a significant time commitment with the screener**
 - P17: “They’ll have you do a substantial amount of the survey before they tell you that you’re not eligible...”
- **Screeners do not always discuss requirements for app installation or providing personal information**
 - P4: “They just wanted too much personal information and they didn’t warn me up front that they wanted this kind of stuff that I had to download this kind of app where they want personal information more than just what I’m willing to release. I’ve backed out of studies and lost my time on that.”
- **The estimated study completion time underestimates the actual time necessary to complete the study**
 - P23: “Studies that aren’t described accurately by the researcher. So for example, it’ll say that the study is paying \$15 an hour. And they claim that the study will take only 20 minutes, but in reality, it takes 40 minutes... They’re not paying \$15 an hour. It’s actually \$7.50 an hour.”

Overall, issues with the screener and study protocol can make it very frustrating for participants to complete a study. And when they need to abandon due to problems with a prototype or unclear directions in the study protocol, they often do not receive a payment for the study.

4.3 Prototype-based issues

Once successfully linked to the required prototype, participants also encountered issues that prevented them from properly seeing or interacting with the prototype. While some of these issues are visible immediately, others do not surface until later in the study, making it difficult or impossible to proceed.

- **The prototype is not optimized for participants’ device or browser**
 - P22: “Sometimes with tablets, I have a lot of UI issues with scaling—text not being properly sized, elements not being in the right places, and it’s hard to see or interact with certain things.”
- **The prototype does not load correctly**
 - P14: “I was supposed to review a prototype, but the prototype simply did not load. So it’s like, there was nothing for me to test.”
- **The prototype breaks or freezes mid-study**
 - P4: “You qualify for it, you read all the instructions and you get part of the way through it and you have to abandon it, because [...] the prototype freezes.”

4.4 Participant strategies when encountering issues

When faced with issues in online studies, participants often described their solutions or responses to these issues. Strategies varied, with some participants being patient and trying alternative routes, while others, after some effort, chose to simply leave the study. The most commonly reported strategies are described below.

4.4.1 Quitting. Many experienced participants have a mental framework for deciding when to follow-up on a study issue, versus when to cut their losses and quit. Some participants reported an increased likelihood to simply quit a broken study as they gained more experience with online research. As P6 describes, “Now I’m ... a little quicker ... in saying, ‘Nope, this isn’t my fault, this is something on the other side and I’m gonna bail.’” Even in these cases, many participants reported the issue to the platform in addition to quitting their study and moving on to the next.

4.4.2 Working through problems. As noted in past research (e.g. [12]), experienced participants reported in this study that their familiarity with online research platforms has evolved their behaviors in online studies in ways that may ultimately benefit study requestors.

Multiple participants reflected on how they initially experienced anxiety when studies included issues, but now have more confidence in what steps to take. When first encountering any type of issue, participants may have simply abandoned the study, but now have more confidence in their ability to problem-solve a variety of issues. As P14 said, “I’m much better at being able to navigate potential roadblocks than I was when I first started doing this.”

In addition, participants also proactively addressed a variety of software issues they encountered in the past by, for example, having multiple web browsers installed for opening prototypes (in case a certain browser is not compatible), and having “the most recent version of different recording apps installed” (P7). Others described taking different proactive steps—to prove study issues they encountered were not their fault. One participant (P19) described their different strategies: “Now I try and [you] know, forge forward as best I can and gather more data. When I do encounter problems, more screenshots or in the case of live interviews, I saved the chats.”

4.4.3 Using built-in reporting tools. When unable to navigate study issues on their own, participants reported using existing reporting tools available through the software platform. These strategies include:

- Filing a support ticket
- Chatting with a live representative or bot
- Checking FAQs on the site
- Emailing the researcher directly or through the platform

While reporting study issues can benefit the researcher, participants noted that platforms either responded too slowly—or not at all. As P12 explains, “Sometimes you just can’t get a response quick enough [to address your issue], so that’s kind of annoying. That makes [things] a little bit more difficult.” Others noted going so far as to stop reporting issues altogether if software platforms are unresponsive. P5 expressed that, “If I don’t ever hear anything back from the

research company, I would be a lot less likely to continue to report things.”

There are real consequences to being unresponsive. In the absence of a timely response, the participant may not receive compensation for a study they are trying to improve, the requestor may lose time and money by launching unsuccessful studies, and the platform may lose feedback that improves its ecosystem.

4.5 Consequences for participants

Online studies that include the issues above have a variety of consequences for participants, ranging from wasted time to not receiving compensation. Participants may even be locked out of joining other studies, depending on the error.

4.5.1 Receiving partial compensation—or none at all. The most commonly cited consequence is difficulty with participant gratuities, as many platforms provide compensation only after a participant has completed a study. While some participants reported receiving a partial payment upon reporting an issue, many receive nothing. This is especially frustrating after participants have invested significant time into a study before encountering the error. As P13 summarizes, *“If you had to spend 40 minutes to play a game and eventually you didn’t get nothing, would you be frustrated? Would you be sad...? I don’t know about you, but I definitely am.”*

Others described the low payout of a study not warranting their time to report an issue. As P10 discussed, *“I really don’t want to bother with trying to get partial compensation for what, maybe a dollar, a dollar for a whole survey and I’m gonna be whining to them about, oh, gimme 30 cents or something.”* Without sufficient incentive, requestors may lose opportunities to uncover underlying issues with their studies.

4.5.2 Receiving criticism from research requestors. Some participants reported being criticized by requestors or receiving negative feedback and ratings from requestors based on technical- or protocol-related issues that were beyond their control. As P9 noted, *“They gave me a really bad review... when I felt like I didn’t do [a bad job] because the questions weren’t written well.”*

5 DISCUSSION

One striking finding is that most issues that research participants encounter with unmoderated remote studies are easily preventable and the responsibility of the researcher running the study. Ensuring that links work and are externally accessible, properly screening users for devices that work with the prototype, reviewing question ordering, and more are all issues that a researcher should review before launching a study. While these steps may feel obvious to a seasoned researcher, they can easily be overlooked, particularly by more novice practitioners. Moreover, this “quality assurance” step in creating an online research study is an issue of ethics for researchers. Not performing this step will not only frustrate study participants, but could lead to them performing unpaid work for issues that are the responsibility of the researcher. It is critically important that researchers take this responsibility seriously.

How might we fix these issues? There are several implications to consider:

Pre-flight Checklists: Research platforms or individual researchers can create a checklist for everything that should be checked before launching a study. Researchers should ensure that links work, that prototypes can function for the tasks in the protocol, and that the screener appropriately selects the correct participants. Researchers should complete the study from the participant’s perspective to catch potential issues and more accurately estimate completion times.

Detailed Screeners: Researchers should ensure that screeners appropriately capture the constraints of their study. Particularly we observed hardware constraints leading to issues with our participants. Ensuring that the operating system, screen size, and other constraints are properly included in the screener is critical, especially with prototypes that may not elegantly scale or might require an advanced feature in newer operating systems or hardware. Including questions that are likely to screen out the most participants early in the screener can also help to save participant time in completing lengthy questionnaires only to be screened out without pay at the final step.

Platform Improvements: Platforms can also help to ensure that researchers are properly setting up studies. Before studies launch, platforms could check for broken links, grammar or spelling errors, and other common mistakes. While studies are running, platforms can look for steps where multiple participants seem confused or backtrack, and surface that information to the researcher before additional participants are assigned. They could also calculate the screen resolution of the prototype and add appropriate screeners automatically. Platforms can provide bounties or bonuses for participants who successfully identify issues with a study, thus compensating for any insights that might have otherwise been contributed without compensation. This may also incentivize researchers to fix issues ahead of time by adding a cost to what otherwise would be free debugging from participants.

These implications point to the importance of properly training those running studies. While much has been written about the “democratization of research” [10], allowing non-researchers to run studies, platforms should ensure that those running studies are creating good research experiences for participants. Without ethical review boards, it is easy for online research to cross the line into participant exploitation. Perhaps a happy medium of light, automated review plus checklists can help produce more polished study experiences, as more people without formal research training begin to use these platforms.

6 CONCLUSION

Online platforms offer participants the freedom to participate in research on their own time, and researchers access to diverse participants with relative speed. However, we find that studies using online platforms can and do introduce a number of issues, many of which are preventable. Those issues may also produce real consequences for the participant.

This study lays a foundation for the types of issues participants may face when participating in online studies, and is meant to identify issues, rather than quantify them. Future work should explore the prevalence of these and other issues at scale. And while

this study examined issues that more experienced participants encounter, future work can also explore the issues of novice online study participants, as they may differ. By recruiting more experienced participants, we were able to learn about many issues they have faced throughout their time using a variety of online research platforms, which at times included how they got started and issues with early studies. However, fresher perspectives on getting started could yield other interesting findings and implications for both researchers and research platforms.

Finally, this paper does not include the perspective of the researcher—only of the experienced research participant. Further research may address how researchers currently attempt to prevent technical issues from occurring, and how they incorporate feedback from online participants.

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