

Field trip as Method: A Rapid Fieldwork Approach

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ABSTRACT

Understanding people's attitudes towards and uses of technology is an essential aspect of a successful design process. Ethnography is a proven method for acquiring this understanding. However, there are challenges to incorporating fieldwork, most notably the time factor, considered by some as the greatest barrier. This is especially true for many technology companies whose turn-around time from concept to design to implementation is accelerated. We propose a solution to the dilemma between acquiring the benefits of fieldwork with the compressed timescales of many technology projects by using focused field trips as a method for gaining rich insights into peoples' uses of and attitudes towards technologies in real-world settings. In a short amount of time (one or two days), field trips sensitize design teams to the priorities of stakeholder groups. We outline a systematic approach to incorporating field trips as a method for developing rich, qualitative insights using rapid qualitative studies.

Author Keywords

Field trip; Fieldwork Methods; Qualitative Methods, Ethnography.

ACM Classification Keywords

Human-centered computing, Field studies, User studies, Ethnography.

INTRODUCTION

Rapid ethnography approaches have long been advocated across a variety of domains for understanding social

interaction and behavior in applied research. For instance, in International Development and Public Policy, rapid ethnographies are conducted to acquire a quick understanding of how public policy initiatives are enacted on the ground and to develop recommendations for improving living conditions (1, 14). In Healthcare, rapid fieldwork is used in both clinical trials and local settings to understand healthcare experiences with a focus on understanding 'suffering, healing and well-being' from patient and community perspectives (12, 16). In the Social Sciences focused, short-term ethnographies have been advocated as a compliment to longer, traditional ethnographic studies by leveraging technologies for data collection and analysis, such as audio and video recordings (9, 17). Lastly, in Human-Centred Computing (HCC), methods similar to the field trip approach described in this paper include rapid fieldwork for systems design that focus on understanding stakeholder requirements to optimize the design and integration of technologies into work and social settings (7, 11). Similarly, approaches such as contextual design and others are also used to facilitate iterative design in different user contexts (4, 5, 8). Different names have been attributed to this type of fieldwork in different domains such as; 'rapid', 'focused', 'short-term' and 'quick' ethnographies. Regardless of the name, they each share similar features.

Characteristics of Rapid Fieldwork Approaches

Guidelines for using rapid fieldwork methods have been deployed across different disciplines such as international development, healthcare, social science, and technology design (1, 11, 18, 9, 24). Across each domain, they all share the following key characteristics for how to implement a rapid ethnographic study:

- Supplemental to other research activities including concurrent long-term fieldwork, reviews of similar research, document analysis, or lab-based user evaluation studies.

- Multi-disciplinary teams work together to collect data ensuring that from different expertise and perspectives can be utilized. In circumstances where there are language barriers interpreters can be included as team members to provide suggestions for optimal data collection in consideration of local and cultural contexts.
- Diverse teams conduct data analysis to identify patterns, similarities, differences, interactions, behaviors and unexpected discoveries across participants and localities.
- Participant recruitment is flexible and opportunistic, adapting interview questions, participant-observation, and length of time for conducting fieldwork based upon the actual situated circumstances when engaged in the field.

These four attributes were also considered in our research. However, with a key distinguishing feature from other "time-saving" approaches in that these were applied in an extreme compressed timeframe of one to two-day field trips spending between two to four hours with participants.

Our aim was to discuss the role of technology in the daily lives of our participants and in what follows we describe how these four principles were applied in an extreme compressed timeframe. In addition, we discuss the strengths and limitations of using compressed field trips as a method for understanding people's attitudes and uses of technology. Finally, we consider how we might integrate this approach into future research focused on understanding the role of technology in people's daily lives.

We organized these field trips as part of an HCI conference with a goal to create new approaches to facilitating future collaborations amongst researchers and practitioners attending the conference. An HCI conference attracts a large number of both researchers and practitioners to new destinations and traditionally conferences host workshops as a way of making opportunistic use of these events to enable the exchange of early ideas, to trigger future collaborations and advance the field. However, we thought that a more novel way to trigger exchanges of expertise and knowledge would be to take conference attendees out of the building and immerse them into the richness of the world outside.

Attendees were introduced to new local contexts, new problems and new opportunities through their engagement in concrete case studies where they would participate in research and have an opportunity to discuss together during the conference and afterwards. Field trips are not only concerned with conducting research rapidly (though that comes as one of the constraints of conducting field trips at a conference). It is also a considered approach that facilitates multidisciplinary collaboration to engage with a research topic from different perspectives. Moreover, academic and industry-led conferences are a viable venue for organizing field trips to specific locations. Leveraging opportunities for cross-disciplinary research that may lead to further collaborations amongst participants after conducting field trips at the conference location.

FIELD TRIP AS METHOD

Taking a field trip involves travelling to a location to speak directly with local stakeholders and to immerse oneself, however briefly, into their environment. This could be a workplace, a home, or a public place such as a train station or a public park. Being on location provides opportunities to gain firsthand experiences of life within that environment.

First and perhaps most importantly, when coordinating a field trip do not to be placed into a position of becoming merely a 'tourist'. This may occur if an intermediary organization is asked to coordinate access to a location. Make sure that the location chosen is not separated from the larger milieu of activity. In addition, ask the local coordinator if the participants recruited have a more privileged position. Also, be mindful of whether participants give deferential replies to interview questions (2). This 'tourist' approach to field trips may produce biased findings. To mitigate against this risk, ensure that the research group communicates with the intermediary organization your requirement to access locations and participants that reflect the realities of daily life. In addition, whilst in the specific region or area, request a visit to unplanned locations that are not on the itinerary if at all possible.

Rationale

In some circumstances, the most practical strategy for meeting with stakeholders in their local contexts is by using a rapid ethnography approach. However, rather than taking weeks or months we propose that one to many compressed duration field trips of between 2 to 4 hours provides an avenue for sensitizing design teams to the priorities and preferences of stakeholders to understand how technologies are used.

In applied research, the role of ethnography in technology design is different to extended ethnographic studies in the social sciences and anthropology. Generally, in a design project, the aim is to understand the context of current practices and technology use, rather than to develop a comprehensive understanding of the cultural context in its entirety (19). That is not to say that long-term studies of technology in broader cultural contexts do not take place in HCI, nor that they are not needed (10). Rather, in projects where time is a limiting factor, field trips are a means to accommodate for the compressed timescales of many technology-related research projects.

Even so, it is worth mentioning at the start that field trips should not be characterized as the optimal approach to gathering qualitative data for design projects. Rather, field trips should be differentiated as a compromise that considers the realities of project time constraints. This being the case, when field trips are used as a method it is important to apply the same qualitative tools and techniques in the same rigorous and systematic manner as when they are implemented in long-term studies. The only difference between the two being the amount of time spent in the field

and the focus of inquiry applied to specific considerations related to the design project (18).

When to Conduct a Field trip

When there is a limited amount of time to develop an understanding of a specific situation or setting, field trips are useful for acquiring information in four areas:

Exploratory

When there is a minimal amount of information related to a specific setting, field trips can be used to make initial contact in an unfamiliar area, to develop a preliminary understanding of it, and to identify areas for further study.

Empathy

To understand the feelings, situations, circumstances, and experiences of stakeholders will help sensitize design teams to stakeholders' day-to-day lives in context and to understand what is relevant to them.

Attitudes and Opinions

Acquiring a sense of stakeholders' beliefs, convictions, ideas and viewpoints on specific topics is a useful way to engage in conversations related to the acceptability of and reactions towards technologies.

Practices and Behavior

Observations of how actions are performed, the procedures enacted, interactions undertaken with other people, objects and surroundings are all important for revealing the production and organization of social interaction, including tacit activities and interactions that can inform design.

Logistical Considerations

Similar to any other type of fieldwork, organizing a compressed field trip requires careful planning, especially when some researchers might be unfamiliar with the environment. The good news is that field trips can join together with other events organized at the same location – in many cases this could be a conference, workshop or meeting. Through this approach experts from different domains who may already be traveling to the same location have the opportunity to connect with each other and local stakeholders. For example, HCI conferences take place around the world making it possible for the local organizers to connect attending researchers to a specific group of users or to an intermediary organization such as an NGO or other group to organize field trips. Field trips can also be organized by design teams in academic departments or software design companies.

Planning

This can be divided into three phases – pre-planning, on-day checklist, and post analysis. At this stage it is important to:

- Formalize the research aim, agenda, and questions.
- Identify how to gain access to participants at their location.
- Develop the tools required to conduct the fieldwork such as an interview framework, consent forms, participant compensation.

- Assign clear roles and tasks to researchers for on-day work including who will be the interviewer, note-taker, observer, and photographer.
- Arrange travel to the location and other practicalities such as taxis, lunches, and access to facilities such as toilets if these may be difficult to find or use.
- Discuss risks and contingency plans to prepare for any unforeseen circumstances and how these might be addressed.

On the day of the field trip, it is important to keep an open mind and to be open to plans changing since there is little control once in the field. After the fieldwork is completed, researchers should immediately share their first impressions with each other including their interactions with participants and their experience of the environment. Schedule time and secure commitment from researchers for several online or in-person data sessions to develop a more detailed post analysis of the data gathered and to draw firmer conclusions.

Participant Recruitment

Participant recruitment should be handled in the pre-planning phase. First, the target stakeholder group, whose attitudes and experiences of technology are to be examined, should be identified. One strategy for gaining access to a stakeholder group is to collaborate with local NGOs or other local intermediary organizations that serve the target group or have access to them who could recruit participants through flyers or word of mouth.

In addition, researchers could opportunistically recruit participants that are visiting the intermediary organization on the same day and time that they are there. If an in-depth understanding of participants' home or work environment is required, going door to door with an intermediary organization representative or and individual local host might also be an option. An intermediary organization can provide a trustworthy introduction between researchers and local communities on the day of the visit which could help build rapport more quickly. The organization might be able to include their own researchers or case workers as intermediaries between the researchers and participants to help build trust. The recruitment process should also include discussions with participants around informed consent and clarifying how they will be compensated.

Data Collection

Any qualitative research method can be applied in a field trip to collect data. For instance, interviews can be conducted either one-to-one or in a group. A semi-structured interview framework covering key themes or questions should be prepared in collaboration with your multidisciplinary research team. However, ensure that when in the field that there is the freedom to engage and explore topics whilst accommodating serendipity. For both interviews and observation, appropriate background information about the participants including their age, gender, years of technology usage, can be collected to understand demographic characteristics. Since participants can have varying levels of

literacy and comprehension skills the details of the research aim, participant risks, data collection, and publishing agenda should be provided in simple and clear language. Obtain informed consent either through signing a form or verbally at the start of an audio recording.

Because there may be researchers with different backgrounds and expertise each may focus their attention on different aspects of data collection such as interview techniques, gathering visual data, or observation. Given this, it may be necessary to identify which methods and approaches will be used for collecting data and to assign each researcher with the responsibility to collect and share that data with the research group. For instance, in a team of three researchers conducting a group interview, one could be responsible for the audio recording, one for taking pictures of the location and interview process, and one for taking notes. To supplement the data gathered to include broader social, cultural and economic factors these can be acquired by triangulating your data with a variety of academic studies and government statistics.

A recommended checklist for data collection includes the following:

- Pre-planned interview framework, consent form and demographics form, compensation for participants, identification of researcher roles.
- Equipment check including audio and video recorders and SIM cards (if travelling to different countries).
- On the day bring paper print outs, ensure recording devices are fully powered, also bring pens, batteries, and arranged compensation.

Data Analysis

Immediately after the field trip conduct a debrief session with your research group to discuss first impressions. Later in the week, researchers compile their observations and notes, transcribe interviews, and share all material (notes, pictures, videos, audio recordings, transcriptions, forms) on a secure, password protected shared drive. Once the data collected is made accessible, researchers can begin data analysis first individually, and then collaboratively as a group. An effective approach for analyzing qualitative data is thematic analysis which is used across a range of epistemological commitments and disciplines including anthropology, psychology, and sociology (15). Initial findings can then be triangulated by conducting a literature review of similar research and through discussions with local experts close to the field trip location. For instance, field trip participants might discuss news or events that local experts can elaborate (e.g. attitudes towards a specific technology in the region), thus providing the context to findings that might otherwise seem arbitrary. Further analysis and discussion can continue for geographically distributed researchers using video conferencing and secure shared document services.

FIELD TRIP IN PRACTICE

In this section we present a case study (22) describing how we used field trips as a research method and describe what it was like to implement in actual practice. At the INTERACT conference in Mumbai India in 2017 we conducted a two-hour field trip inside the Dharavi slum. The aim was to discuss the role of technology in the day-to-day life of nine families who live there. We achieved this through group interviews with nine women who were the wives and mothers representing the families. The aim of the field trip was to understand attitudes and opinions of families in low-income urban communities towards technology use for their children's education.

Negotiating Focus Groups

First, we came together as one group of participants and researchers for a brief introduction and then divided into smaller groups. There were nine researchers from different academic backgrounds and nationalities. Each brought with them their own area of expertise in human-technology interaction. We decided to divide into three groups each consisting of three participants and three researchers. There was an Indian researcher in each group who could interact in a common language other than English.

Conducting Group Interviews

Each group had the same semi-structured interview framework to work through. However, it soon became evident that we would need to be more flexible in our approach. This was especially true as participants in each group varied widely with different education levels and technology use. For instance, one group had participants with university degrees and access to technology in the home. Whilst another group included participants with low levels of schooling and no technology use other than low-tech, mobile phones used for voice calls and text messages (feature phones). Lastly, one group had three male researchers interacting with three female participants (which upon reflection, we believe resulted in less open dialogue).

Each group soon realized that they needed to adapt their approach to conducting each focus group for the purposes of establishing and maintaining rapport. In two cases, the interview plans were modified. Specifically, for the non-technical group, questions were realigned to how the women use their feature phones and aspirations around technology in the future. In the gender-skewed group, the male researchers predominately listened letting the women take the lead in the conversation rather than the men. In the university-educated group, the research protocol was carried out to plan with all questions in the semi-structured interview framework completed. After the three groups completed their interviews we came together again as one large group that included all the researchers and participants. We thanked the participants and they were given a small gift as compensation after which they departed.

Field Trip Debrief

The researchers gathered in the room were the focus groups took place to share the topics discussed in their groups as well as thoughts and impressions of the process. We agreed four key take-aways that could be used to guide our approach to conducting field trips in the future. First, including a researcher in each group who matched the language and place of origin of participants was crucial for establishing rapport. We experienced first-hand that geographic and linguistics similarities across researcher/participant groupings made participants more comfortable. Second, we also acknowledged that there was a gender mismatch in one group and that males and females should be equally divided across the groups. Third, we found that groups adapted the research plan to conform with the local setting and unexpected arrangements. Adapting the research plan was crucial for gaining insights that were grounded in the unique circumstances and situations of each participant. Lastly, in each group we encouraged participants to lead the conversation. We found that being mindful of age or status differences where participants might perceive visiting and foreign researchers as being more knowledgeable or higher in the social hierarchy could result in less participation and open dialogue.

Being sensitive to each of these may not completely lessen perceived power dynamics between researchers and participants. However, we can attempt to reduce these perceptions by dressing and behaving appropriate to the culture, setting, and situation; arriving in a regular taxi and not a limousine for instance; and encouraging participants to lead conversations and reassuring them that they are in control of the interaction.

FIELD TRIP REFLECTIONS

One week after the field trip, we sent out an online survey to engage with the other field trip coordinators at the INTERACT 2017 conference to identify the motivations for, and the successes and challenges of conducting a field trip. Four coordinators responded to fifteen questions and their answers summarized.

Motivations

Researchers said they were motivated to coordinate a field trip primarily because it was an opportunity for them to enter into a setting, an urban slum, that would have otherwise been very difficult for them to access. Additionally, there was an interest in conducting cross-cultural comparisons between this field trip with similar studies conducted in other countries. Finally, collaborating in multidisciplinary research with international colleagues provided them with an opportunity to draw upon a diverse set of expertise.

Planning

The field trips were construed in such a way as to “plan for spontaneity”. Although plans were created such as pre-written interview frameworks; upon arrival, all field trip coordinators indicated that it was important to be flexible by adapting to the local situation. Many said it was important to

ensure that contact between researchers be maintained through mobile phones if researchers disperse. Importantly, they pointed out that at least one person in each distributed group have a local SIM card that works in the region. One coordinator suggested that rather than use several taxis, that travelling together in a small bus or van may reduce the risk of some researchers getting lost when trying to find a location. Finally, one researcher said it was important to include equal numbers of ethnically similar researchers in the field trip groups.

Conducting the Research

Each of the field trips used qualitative methods including individual and group interviews, observation and drawing. Interestingly, the interview frameworks used in all four field trips was modified once researchers entered into the local environment and began interacting with participants. For instance, plans to conduct one-to-one interviews in two of the field trips were changed at the last minute to group interviews so that they could efficiently complete the research in a crowded and loud environment. In addition, groups adapted interview topics to what was relevant to participants on location which lead them to unexpected insights. For example, one focus group discussed their concerns related to the health effects of electromagnetic radiation emissions from cell phone towers which was not an initial topic in the interview framework.

Overall Impressions

Field trip coordinators identified success, challenges, and recommendations for using field trips as a method. Successes identified included working in multidisciplinary teams, opportunities to compare results across a variety of similar research, and the ability to experience a local setting. Challenges identified include managing communication when researchers were dispersed, ensuring that researchers feel safe on location, and having too many researchers on a single field trip. Recommendations based upon their experiences include:

- Limit participation to four researchers per field trip due to the added complexity of coordinating logistical matters with larger numbers and also because too many researchers may intimidate participants.
- Ensure communication between distributed researchers because losing contact may bring with it feelings of insecurity and also makes ad hoc planning difficult.
- Transportation coordination to and from a location in a single vehicle with all researchers travelling together if possible.
- Distributing researchers by gender, regional knowledge, and scholarly expertise to ensure a multidisciplinary representation within subgroups.
- Pre-field trip organization and team-building to develop a common understanding about the purpose of the field trip, relevant background information, its location, and logistical considerations.

Overall, each field trip coordinator viewed field trips as a worthwhile approach for quickly gaining access to stakeholders in their day-to-day settings, to generate an understanding of current technology use, people's needs, aspirations, and priorities.

DISCUSSION

Field trips are a rapid ethnography approach that facilitate engagement with local communities in compressed timeframes. Within two to four-hours a surprising amount of information can be gathered, providing a richer understanding of how technology affects people in their day-to-day lives. However, it is only possible to achieve success by applying the same qualitative tools and techniques in the same rigorous and systematic manner as in long-term studies.

Within the context of an HCI conference, field trips were conducted as a new way to facilitate multidisciplinary research collaborations. At the INTERACT conference in Mumbai India in 2017 seven field trips were curated by three chairs and coordinated by ten researchers (20). The field trips included thirty-seven researchers each representing different disciplines from across the globe, including Australia, China, Denmark, Finland, Germany, India, Italy, Japan, Romania, Sweden, Switzerland, the U.K., and the U.S., as well as nine student volunteers from India and one from Germany. The field trip approach proved to be a versatile method where useful insights were revealed around, for example, ways to support sustainable fishing practices using a mobile app (4), perspectives on personalization and privacy (21), and the role of mobile devices for workers conducting day to day tasks (23).

Field trips can be used as one instrument in the research toolbox that produces practical ethnographic knowing. However, it is important to critically assess and understand the trade-offs to adopting the field trip mode of knowing in contrast to more conventional strategies of longer fieldwork immersion. As researchers in other domains such as international development and social science have discussed, conducting compressed ethnographic fieldwork is a feasible solution when time is limited. Spending several hours (8, 16) to up to four days (1, 12) in short sessions with participants can yield good results.

Within the HCI community there is a tradition of integrating qualitative studies in a way that is compatible with the software engineering lifecycle to meet the needs of project time constraints. For instance, quick usability testing is commonly accepted for evaluating interfaces with five users to identify 85% of usability issues (13). Also, quick and concurrent ethnographies in systems design are used where weeks rather than months are spent in the field and include constant debriefings with software engineers (6). These too are compressed methods for gaining access to stakeholder opinions, attitudes and uses of technologies that take into consideration the real-world practicalities of working within limited time constraints.

Our aim with this research has been to contribute to and extend the development of compressed qualitative methods through the implementation of field trips and to demonstrate its effectiveness, flexibility, richness of data, and facilitation of multidisciplinary collaboration.

CONCLUSION

For this paper we present our experiences, successes, challenges, and recommendations for using field trips as a rapid ethnographic method. As a supplement to other research activities, field trips are a valuable sensitizing tool that can identify the priorities of stakeholder groups in a relatively short period of time. Further research will expand upon these preliminary guidelines to expand its focus into ongoing technology design projects where teams will work closely with software and hardware engineers to ensure the meaningful integration of stakeholder needs into technology design.

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