REVIEW

A REFLECTIVE ACCOUNT OF PARTICULARISING ETHNOGRAPHIC PRINCIPLES AND PRACTICES FOR DOING ICT4D RESEARCH

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Abstract

A growing number of studies have employed ethnography in information and communication technology for development (ICT4D) research, yet serious questions are still being asked with regard to the lack of rich ethnographic description and the failure to adequately position the ICT4D ethnography within the digital and media ethnographic tradition. This paper contributes to these questions by providing a reflective account of the principles and practices of doing ICT4D ethnography. It builds on the approaches of doing social research and field experience in Sierra Leone to demonstrate how the principles and practices of traditional ethnographic approach can be adapted and particularised for ICT4D study. It reflects on the what, why and how questions for doing ICT4D ethnography, illustrating its practical applications to exploring the complex relationship between ICTs and human development. I conclude by arguing that despite the usefulness of ethnography in ICT4D research, its appropriate applications are often constrained by the pressure for ICT4D researchers to adhere to the requirements of development agenda; demand for short-term outcome reports; and the pre-occupation of result-based approaches in development impact research.

Keywords: information technology for development, development studies, ICT4D ethnography, mobile phone for development, research methods, digital ethnography

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Introduction

The purpose of this paper is to demonstrate how the principles and practices of traditional ethnographic approach can be adapted and particularised for ICT4D research. The ICT4D research has come a long way since its inception around the mid-1980s, and it is acknowledged for its significant role in establishing the link between ICTs and human development (Heeks, 2017; Walsham, 2017; Zheng et al., 2018). However, despite its significance, serious questions are still being asked regarding the appropriate methodologies and theories required to research and conceptualise the extent to which ICTs actually benefit the poor. Scholars, particularly Krause (2021), Heeks (2010), Heeks and Wall (2018), Gigler (2004, 2015), Thomas and van de Fliert (2015) and Unwin (2009, 2017), are being critical of the methodological approaches needed to demonstrate empirical evidence outside the conventional technology determinism and strictly economic formulations that dominate the field. In recent years, the technology determinism critiques in the ICT4D research can be seen to inform a shift away from technology-centred focus to people-centred approach, and from the functionalist sociological and economic growth approaches that often ignore the situated complexities of everyday practices (Gigler, 2015; Unwin, 2009). Increasingly, researchers are beginning to realise that putting people first and technology last provides a compelling way to understand how ICTs are adopted and integrated into the

everyday world of poor people, and to demonstrate the extent to which the technology contributes to their lives (Gigler, 2015; Heeks, 2017; Unwin, 2017; Sey, 2011).

In this paper, I show that approaching research from the people's perspective can make it compelling for an ethnographic enquiry. Ethnography enables ICT4D researchers to enter the mindset of the users; their everyday life, cultural practices around ICT use; and to deliver outcome that can be unanticipated (Gigler, 2015; Krauss, 2018; Mabweazara, 2010; Seshamani, 2019; Tacchi, 2014). The necessity to do so comes with an increasing number of studies adopting ethnographic approach in ICT4D research (e.g. Gigler, 2015; Horst & Miller, 2006; Kleine, 2013; Krauss, 2012, 2021; Iliya et al., 2019). Through ethnography, researchers can observe and listen to people as they go about their everyday lives and interpret the way they behave or think on their own (Myer, 2009; Chughtai & Myers, 2014; Krauss, 2013). Located within the constructivist paradigm, an ethnographic approach leads to research findings that are literally created as the investigation proceeds (Guba & Lincoln, 1998, p. 207). Through this process, knowledge can be gained or created by understanding the context of how the reality of the world is socially constructed based on an individual construct (Kelly, 1991) and shared meaning (Berger & Luckmann, 1967).

The application of ethnography to particularise ICT4D research relates to the practice of information system ethnographic research because it provides a deeper understanding of human and social relations and organisational aspects of ICT usage (Harvey & Myers, 2002). As a result, literature on ethnography in the information system discipline has been deemed crucial for adopting and applying ethnography to study ICT4D (Krauss, 2018). Specifically, the work of Harvey and Myers (2002), Schultze (2000), Chughtai and Myers (2014) and Orlikowski (1991) are well acknowledged in this respect, some of which I will draw and reflect on in the latter sections of this paper.

The application of ethnography to ICT4D research can also be located within an emerging ethnographic tradition of studying media and digital technologies (Tacchi, 2013). Media and digital ethnography allows to capture and explore the contexts through which media are produced, used and circulated (Horst et al., 2012). It analyses the diverse and pervasive rituals and activities that result in the production of representations, cultural identities, experiences and imaginaries through individual and collective engagement with digital technologies (Coleman, 2010). Similarly, an ethnographic research into ICT4D seeks to capture and understand the creative use and integration of digital technologies into the social, cultural and productive activities of people to determine its true impact on their lives (e.g Gigler, 2015; Kleine, 2013; Rangaswamy & Arora, 2015).

Tacchi (2013) argues that the application of ethnography in ICT4D studies often comes with a number of challenges, linked largely to the lack of rich ethnographic description—that is, a rich and detailed account of field experiences and descriptions of social life around technology usage (Coleman, 2010). According to Tacchi (2013), it is also linked to the failure to adequately position the research framework within the digital and media ethnographic tradition. Arguably, the causality of these problems emerges partly from the blurriness of the boundaries between ethnography and qualitative approach in general. Though situated within the same research epistemology, ethnography is different in terms of data gathering and analytical procedures, particularly in the context of media and digital ethnography (Coleman, 2010; Pink, 2015; Postill & Pink, 2012).

Another argument is that research into the people's perspectives, experiences and the socio-cultural contexts of ICT usage for development purposes is an emerging site in the ICT4D field (Walsham, 2017). As a result, there seems to be no established principles in deploying ethnography to research ICT use in developing countries (Mabweazara, 2010). The strategies generally employed by many ICT4D ethnographers collectively point to the centrality of the researcher's intuitive and creative skills to draw on different sources of ethnographic literature, including information systems research literature (e.g. Harvey and Myers, 2002), traditional ethnographic texts (e.g. Fetterman, 1998; LeCompte &Schensul, 1999), media studies (e.g. Coleman, 2010; Horst & Miller, 2012) and development studies (e.g. Gigler, 2015; Kleine, 2013; Horst & Miller, 2006). Krauss' (2018) recent paper on a confessional account of doing critical reflexive ICT4D ethnography in South Africa provides

a good example. Krauss draws on several ethnographic research method sources and ICT4D project documents and learns from information system studies and other critical ethnographers to demonstrate an alternative practice of a community entry phases of critical ethnography and ICT4D project.

Unlike traditional ethnography where a researcher systematically observes and records the daily routines of participants in their natural milieus, an ICT4D ethnographer observes the contexts and situations in which ICT is deployed and individuals' behavioural actions around the technology—including how they adopt and make sense of ICT in their everyday socio-cultural and economic world (e.g. Krauss, 2012; Kleine, 2013; Ullah, 2017; Powell, 2014). These practices bring unique challenges for doing ICT4D ethnography, given the extent to which digital technologies have personalised communication and broadened new spaces for social interactions (Postill and Pink, 2012). For example, the personalisation of communication by digital technologies posits a challenge for ICT4D ethnographers to make an independent observation. ICT-enabled personalised communications (e.g. SMS, emails and voice calls) are difficult to observe without been deemed intrusive (Mabweazara, 2010). It confines researchers 'to analysing content availed to them by their research participants; thus, making it difficult for them to make independent analytical deductions as the research process unfolds' (Howard, 2002; Mabweazara, 2010, p. 662).

The aim of this paper is to make a methodological contribution that would inform and validate the work of future ICT4D ethnographers. I demonstrate the relevance of traditional ethnographic approaches in ICT4D research. I show how traditional ethnography can be adapted and particularised for ICT4D research and generate data that can help explain development through ICTs. While the paper recognises the usefulness of information systems research for particularising ICT4D ethnographic research, it is largely grounded in the media and digital ethnographic tradition. Like Krauss (2018, 2021) and Mabweazara (2010), I draw upon my field experiences in Sierra Leone and relevant sources of literature on traditional and digital ethnographies to reflect on the principles and practices of doing ICT4D ethnography.

Ethnography and ICT4D Research

Through earlier anthropologists, such as Bronislaw Malinowski (1922) and Alfred Radcliffe-Brown (1952), to mid and late classical ethnographers, including Harry Wolcott (2003) and Suzanne Hall (2012), we learned that the meaning of traditional ethnography relates to the act of observing, interacting and learning about social structures in groups, communities, organizations and cultures (Reeves, Kuper, & Hodges, 2008). A typical characteristic of traditional ethnography involves a long-term realistic emersion in bounded settings, where ethnographers observe and record social behaviours across different sites, societies and cultures (Fetterman, 2010; Myer, 2009; Berry, 2011). Another characteristic of traditional ethnography deals with the use of multiple methods, including participant observation, interviewing, focus group discussions and document analysis, to gather information of the cultural practices and views of people in a given society (Atkinson & Hammersley, 1995). Ethnographers use this information to recreate the field scenarios and experiences through the means of 'thick description' (Geertz, 1975), a practice Williamson (2006) and Saule (2002) describe as doing a standard traditional ethnography.

Increasingly, the availability and access to digital media and technology has contributed to the fragmented and competing understanding of doing traditional ethnography. The introduction of new platforms and devices, and the communication rituals that accompany these technologies, has led to the creation and broadening of new sites for ethnographic enquiries (Coleman, 2010; Pink, 2015). Rather than doing ethnography on the basis of long-term emersion in society or culture to generate 'classical ethnographic knowledge', ethnographers have begun to find new flexible routes to ethnographic knowledge and understandings, often involving new technologies (Postill & Pink, 2012, p. 125). In the process of broadening 'ethnographic places' (Pink, 2015) to seek new knowledge and understandings, different nomenclatures and practices of ethnography have emerged. This includes online ethnography (Reeves et al., 2008), virtual ethnography (Hine, 2000), digital ethnography (Coleman, 2010), media

ethnography (Nightingale, 2012), social media ethnography (Postill & Pink, 2012) and netnography (Kozinets, 2002)—all generally refers to the adoption of traditional ethnographic techniques to study cultures and communities emerging through computer and mobile-mediated communications. Another form of ethnographic research has evolved around mobile devices, known as mobile ethnography. It involves using mobile devices to collect data on cultures and society in non-digital unbounded environments (Muskat et al., 2018).

However, regardless of the new formations of ethnographic research, the core rituals of traditional ethnography, including observing, interacting, recording and interpreting the situated characteristics of the social and cultural life of people, are embodied in the Internet and mobile ethnographic inquiries. Thus, the focus of this paper is to provide a reflective account of the use of traditional ethnographic methods in ICT4D research and highlight the challenges that come with it, and ways to deal with those challenges. The adoption of ethnography in ICT4D research seeks to elicit alternative knowledge and understandings that challenge the dominant forms of technological and economic determinisms in relation to ICT4D (e.g., Pigato, 2001; Waverman et al., 2005). Ethnography offers a balanced insight into what Tacchi (2014) called the 'contextualised affordances' of ICTs in development processes (Tacchi, 2014).

The notion of contextualised affordances in ICT4D discipline refers to the attributes of contexts that inform the effective use of technology to support development processes (Diniz et al, 2014). Increasingly, studies have demonstrated that an inappropriate alignment of ICT4D project design with social, economic and political contexts results in less productive outcomes (Gigler, 2015; Iliya et al., 2019; Sam, 2017). In Bangladesh, for example, Ullah (2017) reports that not adequately aligning the telecentre project with the rural social, economic and political realities of the poor results in less access and improved wellbeing of the rural population. Hence, the importance of context in the ICT4D discipline cannot be overemphasised because it remains one of the strong requirements for maximising ICT for development outside the technology deterministic framework. This is also clearly reinforced in Tacchi's (2014, p.105) argument that for ICTs, including mobile phones, 'to serve as active agents for development, they must be understood within specific uses and settings to understand the part they play in social and economic meaning making'.

Overall, two important observations can be made here: first, technologies have different meanings in different contexts and among different social groups (Diniz et al, 2014). And second, technology alone cannot bring about development unless its meaning is interpreted based on how it is integrated into the economic, social, cultural and productive activities of the users' lives (Sam, 2017). In the light of the above observations, this paper demonstrates the continued importance of an ethnographic inquiry into the real-context and uses of ICT in the developing world. I build on field experiences in Sierra Leone and the works of ICT4D researchers, such as Horst and Miller (2006), Burrell (2012), Powell (2014), Heeks and Wall (2018) and Krauss, (2012, 2013, 2018, 2020), to discuss, reflect and outline useful principles for doing ICT4D ethnographic research. I aim to particularly demonstrate that ethnography offers the tools to investigate and understand how the poor and marginalised users integrate and make sense of technologies in their everyday lives either as individuals or groups.

Summary of the Sierra Leone Case

The Sierra Leone study responds to: (i) the increasing voices in literature calling for research that explores how ICTs such as mobile phones are creatively use and integrated into the social, cultural and productive activities of poor people to accrue the true impact on their lives (e.g., Gurstein, 2003; Unwin, 2009; Walsham, 2017); and (ii) the increasing demand on the development of new theoretical approaches based on empirical evidence that explain the relationship between the use of ICTs and human development (Heeks, 2010; Thomas, 2012). The study had three phases. The first phase explored the different ways through which marginalised people acquire and own mobile phones. It examined the reasons underpinning the mobile phone acquisition and the different ways it is used. The second phase

looked into the socio-economic and political implications of mobile telephony on livelihood options of marginalised people in Sierra Leone. In the final phase, the study interrogated the institutional and infrastructural arrangements and socio-economic challenges that enable or inhibit marginalised young people's capability to access and use mobile phones to their advantage. The three phases were guided by the main argument of the study – that is, mobile telephony can create a development change in the lives of poor people, but the kind and extent of change depends on how it is adopted and utilised by individuals, the socio-economic and political contexts in which it is used and the availability of an enabling environment (e.g., organised institutional structure) and resources (e.g., infrastructure, income and innovation).

The study joined the approaches of other ethnographers such as Burrell (2012) and (Powell, 2014), Tacchi (2014) and Host and Miller (2006), who have contextualised people's experiences and behaviour around the Internet and mobile phone usage in developing countries. Positioned from the user-centred perspective, the study adopted a range of ethnographic methods, including participant observation in rural and urban communities, interviews, group discussions and document analysis, to analyse mobile phone usages and implications on human development. The ethnographic fieldwork lasted for five months. During this period, I conducted participant observation, in-depth interviews with 50 participants (marginalised people, ages between 18 and 35 years), 22 key informant interviews and five focus group discussions, each composed of 3-8 participants (Barbour, 2011; Boeren, 1992). The research methods were not employed systematically. Rather, they were integrated where necessary into the data collection process to provide a holistic understanding of the research problem under study. Research data were analysed using thematic analysis echoing Geertz's thick description. The approach provided the instrument to organise and interpret the data in ways that reflected the participants' experiences and shared meaning (O'Reilly, 2005; Roper and Shapira, 2000). Recorded interviews and field notes were reviewed, transcribed, analysed and coded to generate categories, patterns and themes (Roper and Shapira, 2000). The choice of codes and themes adopted relied largely on the focus of capturing key concepts from the raw data to address the research questions, leading to a meaningful interpretation of the phenomenon under study (Braun & Clarke, 2006).

While the results of the study have been published elsewhere (see for example, Sam, 2017, 2019, 2020), in this paper, I provide a reflective account of my fieldwork experience, demonstrating the unique perspectives involved in doing ICT4D ethnography in Sierra Leone. I highlight the key principles and practices involved and the challenges experienced along the process.

Entering the Field

Mapping the Research Site

To reiterate, ethnographers observe, record and describe the social behaviour of people across a single or multiple sites. Usually, these sites can be online, offline or a combination of both (Coleman, 2010; Horst et al., 2010). For example, we have seen ethnographers focused on one site (e.g. Powell, 2014; Wolcott, 2003) or more than one site (e.g Hall, 2012; Horst & Miller, 2006). Research shows that the choice of offline or geographically bounded field sites rests on a number of factors, such as cultural richness, research objectives, convenience and proximity, time and financial resources, easy accessibility, policy significance, and so forth (Angrosino, 2007; Walford, 2001). For instance, in Walford's (2001) study, which compares government policy and practice on faith-based schools, two ethnographic research sites (two schools in Netherland and England) were selected because of the significant role each school has played in policy processes.

When it comes to ICT4D ethnography, the choice of a research site is complicated. ICT4D ethnographers seek to holistically analyse individual and institutional contexts, ICT uses and implications on the livelihood options of the poor (Krauss 2012, Gigler, 2015). Often this can be done both online and offline, and the choice of field sites may rest on additional factors, such as an individual or institutional access to technology and the contexts in which the technology is deployed, adopted and

used (Tacchi, 2014; Kleine, 2013). An ethnographic inquiry into ICT4D funded projects, for example, may require different criteria for selecting a field site relative to a study that examines the general use of ICTs in a particular setting. For instance, in selecting ethnographic sites for ICT4D funded initiatives, both Gigler (2015) and Ullah (2017) emphasised the importance of socioeconomic conditions and the cultural and local realities of the communities in which the ICT programs are deployed. Horst and Miller's (2006) choice of sites in their study in Jamaica considered the urban versus rural representation of social and economic livelihood of ordinary and low-income Jamaicans. Equally, to understand the link between the everyday mundane Internet use and the acquisition of digital literacies through leisure practices in India, Rangaswamy and Arora's (2015) selected resource-poor and digitally stressed slum communities as sites for ethnographic enquiry.

My study in Sierra Leone chose two communities in rural and urban districts. The choice of the two research sites was not as easy as one might anticipate, given the focus of the research. As mentioned above, the research critically examined the extent to which ICTs such as mobile phones can emancipate marginality and improve the livelihood of poor individuals in Sierra Leone. Conducting this research required the need to focus on extremely disadvantaged communities with active mobile phone networks and avid users. The decision to choose the field sites followed the works of Walford (2001) and Fetterman (1998) by first conducting preliminary studies to refine the research problems, inform the choice of research communities and identify potential research participants. The preliminary study lasted for one month and it involved observations, interviews, focus group discussions and document analysis. The information obtained informed the development of the criteria for identifying and focusing on marginalised young people in Tombo and Wellington.

I chose Tombo and Wellington field sites because of their geographical proximity to Freetown (Sierra Leone capital) central administrative offices, access to mobile phone network, socio-economic characteristics, and have a significant presence of the research participants. Tombo is a small marginalised rural fishing community located on the peninsula highway about 49 kilometres east of the capital city Freetown, while Wellington is a highly populated and remote urban community located east of Freetown. Both Tombo and Wellington were extremely poor and marginalised communities with limited livelihood opportunities for the inhabitants. A majority of residents in these communities rely on the informal business and financial activities, such as petty trading, fishing, motorbike riding and menial jobs, for survival. The demographic and description of both sites helps to map detailed contexts in which the technology is embedded; understand how ordinary people negotiate the social and economic challenges of everyday life; and determine the role technology plays as they try to make ends meet. In ICT4D ethnography, understanding such a complex relationship helps to capture the contextualised affordances of technology (Tacchi, 2014).

In particular, my experience suggests that there is no one-size-fits-all rule approach in selecting research sites for an ICT4D ethnographic research, as it seems to reflect in traditional ethnographic approach. Understanding your capability and limitation as an ICT4D ethnographer is critical in determining the research field sites (Angrosino, 2007). More importantly, what you intend to achieve and who you intend to interact with is another important point to consider. Some developing countries research sites may be dangerously and extremely difficult to negotiate for a number of reasons such as unstable political environments; vulnerability and expectation of the research participants; the difficulties to reach out to key authorities; and the treat to personal safety. Therefore, to reinforce Walford's (2001) point, it is important to do a preliminary research work to ensure that you choose the appropriate research sites, participants and tools.

Choosing Research Participants

Traditional ethnographies literally describe people in their cultural milieu (Angrosino, 2007). Therefore, depending on the objective of a particular research, traditional ethnography would suggest the need to focus on a homogenous group of individuals in a specific locale, irrespective of their social or economic backgrounds. As Angrosino puts it:

"It is important to understand that ethnography deals with people in the collective sense, not with individuals. As such, it is a way of studying people in organised, enduring groups, which may be referred to as communities or societies" (2007, p.14).

However, my ICT4D ethnography refutes this blanket categorisation of research participants and suggests a contextual and need-based approach to selecting research subjects for an ethnographic inquiry. During my ethnographic emersion, I realised that people in the developing world are not a homogeneous entity whose problems can be addressed by a one-size-fits-all approach. Different people face different economic and socio-political problems as well as differing aspirations to overcome their problems. Therefore, to understand how ICTs shape or are shaped by individuals to articulate their everyday world, research should be directed towards a specific group of people. ICT4D ethnographers, such as Horst and Miller (2006), Ullah (2017), Krauss (2013), Burrell (2012), Powell (2014), Rangaswamy and Aurora (2015) particularised this principle in their studies. In Ulla's (2017) study in Bangladesh, rural dwellers served as specific research participants to understand the use of telecentres. Similarly, Horst and Miller's (2006) study in Jamaica examines ordinary Jamaicans use of mobile phones in two-low income communities, while Burrell (2012) explores young Ghanaians' use of Internet cafes. My study in Sierra Leone focused specifically on marginalised young people who are deprived of cultural, social, economic and political opportunities either because of the state, community and family neglect.

Arguably, knowing your target research participants is critical, but how to locate and interact with them is an important principle to learn from my experience in doing ICT4D ethnography in Sierra Leone. At the beginning of my ethnographic fieldwork in Sierra Leone, I had a broad idea about the category of the potential participants, but it was not clear how to locate them in the two research settings. To grapple with this challenge, a 'big-net' exploratory observation approach was employed after building a considerable amount of rapport in the research settings (Fetterman, 1998). According to Fetterman (1998, pp. 32-33), 'the big net approach ensures a wide-angle view of events before the microscopic study of specific interactions begins'. The goal of the explorative observation was to capture a broad understanding of the concept of youth marginalisation and the everyday practices around mobile phone usage. In doing the observation, I approached the research settings with general questions such as: what is going here, who are marginalised youth, and how do they go about their everyday activities? At this stage of the study, a snowball sampling approach was employed to reach a broader audience. I visited the targeted settings, popular hangouts of young people, asked existing participants for referrals, asked community informants and organizations that may have dealt with young people.

Preliminary information obtained through observation and informal discussions provide a confessional account of what it means to be a marginalised young person in Sierra Leone. It suggested that the concept of youth marginalisation involved a wide range of socio-cultural economic and political dynamics. The concept of marginalisation was highly linked to the government neglect to provide employment, education, health facility and shelter for a majority of young people. Marginalisation was also linked to parental and community neglect to support young people's socio-economic livelihood options. By looking at marginalisation in this broader context, it became apparent that the lack of social, economic and political opportunities had increased socio-economic hardship, subjecting a majority of young people to unbearable living conditions. The resultant effect of these difficult livelihood conditions had left many young people with a feeling of neglect, disgruntle and lawless (Sam, 2017).

Having acquired this broad understanding about the research participants, the next question was how to categorise them in a way that would be logical to understand: (a) how they construct their everyday realities around the mobile phone, and (b) how they can be best represented in the research process. Interestingly, as the exploratory observation continued, an interesting pattern gradually emerged among the youths. I noticed that a majority of young people were organised into five different forms of subaltern groups. These groups were (a) Wharf youth (b) Park youth (c) Ghetto youth (d) Petty traders-informal business or runners (e) Menial jobs/labourers. The categorisation of these groups was

based on a number of factors including educational level, job skills, economic needs, geographical location and means of survival.

Once these groups were established as potential research audience, they became part of the criteria for recruiting the research participants and understanding how these subaltern groups are formed, what they do, what forms of communication and information mechanisms do they use, and how do mobile phones support such mechanisms? To ensure that all groups are represented, the following criteria were set in accordance with the objectives of this study.

- Must be a young person aged between 18 and 35 years and belong to one of the youth categories identified above – the age bracket is in line with the definition of a young person in Sierra Leone (Peeters et al., 2009).
- Have experienced or at the risk of experiencing marginalisation or socio-economic hardship.
- School dropouts and those who have never been to school.
- Unemployed or employed in the informal sector.
- Live within mobile phone coverage area in the research communities.

However, from this point onwards, purposive sampling was employed. This sampling was used to identify and engage with the participants that were likely to generate information-rich data based on these criteria.

Lessons learned from my approach suggest that selecting research participants in specific research settings is not a straight forward process. It needs to be appropriately orchestrated considering people's social, economic and cultural background and context. This is critically because it reinforces the principles of doing ethnography in media and technology-mediated spaces, as articulated by Chughtai and Myers (2014), Krauss (2018), Coleman (2010) and Horst et al. (2010).

Fieldwork: Using Multiple Data Collection Techniques

Adopting a traditional ethnographic approach gave me a larger and more arrays of methods to generate a rich understanding of ICT usage by the poor and marginalised (Murthy, 2008). Some scholars, including Patton (1990), Saule (2002) and Mitchell and Charmaz (1998), argue there is a merit in using multiple data collection methods as it reduces the risk of errors; complements some level of subjectivity; increases trust; and demonstrates rigorous procedure to reconstruct the field experiences. Multiple methods help provide more comprehensive insights into the phenomenon under study (Reeves et al, 2008, p.2). By adopting multiple methods, ICT4D ethnographers can gather data to understand the uses and implications of ICTs on the well-being of the poor and marginalised. A good example relates to Gigler's (2015) work in Bolivia, where he used four methods – surveys, focus groups, participatory observation and in-depth interviews – to gather primary data to examine the impact of ICTs on the well-being of indigenous groups. Likewise, my study in Sierra Leone employed participant observation, focus group discussions, interviews and document analysis methods (Adams, 2012; Patton, 1990).

The application of these methods did not follow any systematic order as ethnographic process is highly reflexive in nature (O'Reilly, 2012). Following O'Reilly (2012), these methods were integrated where necessary into the data collection process to provide a holistic understanding of the research problem under study. Figure 1 illustrates how I integrated these methods in the data collection process. As figure 1 depicts, the data gathering process was done in a spiral format, conforming to an iterative-inductive approach that underpins traditional ethnography (O'Reilly, 2012). The process involved moving back and forth between the research questions, data collection and analytical field notes (Schultze, 2000). The principle here is that ICT4D ethnographers should be flexible and focus on need-based data gathering by integrating appropriate research methods where possible. They should engage in repeated visitations to the research settings and employ different techniques until the needed data are collected to answer the research questions under study (Fetterman, 2010). In this paper, I

discuss mainly the participant observation technique as a hallmark for ICT4D anthropological research, reflecting on how the techniques adopted during fieldwork support or refute existing knowledge in literature.
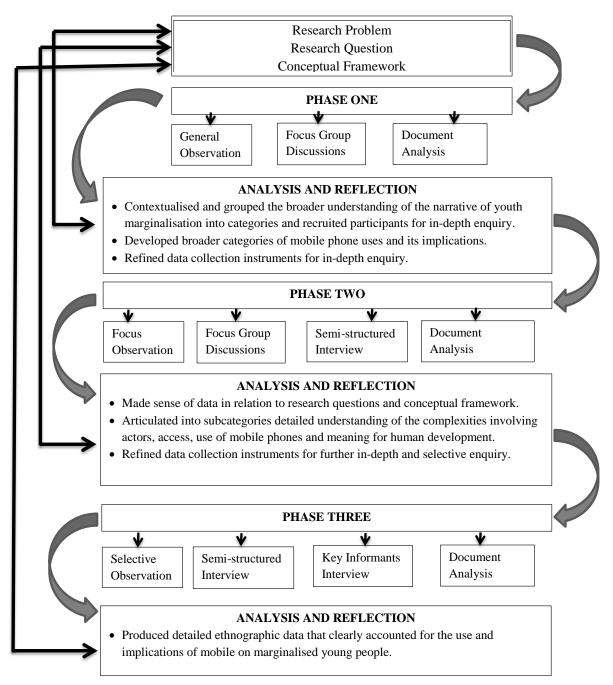

Figure 1: Holistic framework of research methods in ethnography

Participant Observation

Participant observation gives ethnographers the opportunity to engage, observe and report detailed insights into the social practices of people in their native settings (Reeves et al, 2008). In traditional ethnography, participant observation requires ethnographers to immerse themselves in a physical bounded setting, but the emergence of digital technology tends to challenge this norm by opening new ethnographic research sites in the digital or online environment (Hine 2000, Coleman, 2010; Postill &

Pink, 2012). Conducting ethnography with digital technologies or in the online spaces challenges ethnographers to conduct independent observations and make independent analytical deductions as the research process unfolds (Mabweazara, 2010, p. 662). As Howard (2002, p.555) echoes, one notable challenge relates to the difficulty for ethnographers 'to observe and interpret the content of messages sent over new media, since many are text-base and can mean different things to recipients. I particularly experienced this challenge in my study in Sierra Leone. While preparing for my fieldwork, I struggled to find literature on how to observe poor and marginalised people making calls or writing text messages on their mobile phones without being deemed too intrusive. Most of the traditional ethnography books I read did not adequately deal with this challenge. As Mabweazara (2010) also acknowledged, the books ignored certain aspects of new technology culture in the developing world context, in particular how to observe the everyday uses and behavioural patterns around technology in poor communities.

However, following Mabweazara (2010), I built on ethnography's flexibility, research objectives and context awareness to inform my decision on what to observe and document in the field notes. As shown in Figure 1, I employed participant observation throughout the three phases of the fieldwork process. The observation process mirrored an iterative-inductive approach based on Spradley's (1980 p. 73) three observation techniques: descriptive, focus, and selective observation. The sections that follow describe how I negotiated the challenges to enter the field and observe the everyday mobile phone usage behaviour of the poor in Sierra Leone.

Negotiating Access

Entering ethnographic field sites involves both negotiating permission from gatekeepers and gaining access to information (Fetterman, 1998; Krauss, 2018). Usually, the process requires ethnographers to build rapport, garner trust, and learn and adapt to the culture of the people under study (Myer, 2009; Chughtai and Myers, 2014). For ICT4D ethnographies, additional entry conditions may apply. This includes having knowledge of the ICT culture; contextual and underlying values of the people; and oppressive and social, economic and political status of the people in the research communities (Krauss, 2018; Gigler, 2015). The key argument is that ICT4D ethnographers generally immerse both into the activity of ICTs and the sociocultural life of the people to decipher and make sense of their everyday lives relative to the world view (Krauss, 2018, 2021; Powell, 2014).

Accordingly, not all ethnographers experience the same time limits and field entry conditions. Depending on a range of factors, such as prior work experience, cultural knowledge and relationship with research participants and nature and context of ICT research, different ethnographers have different field entry experiences (Chughtai and Myers, 2014)). For example, being an outsider-researcher, Krauss (2018) experienced an initial setback to engage and gain acceptance into the traditional Zulu community in South Africa due to false assumption about the culture of the people. In another study, prior work experience helped Chughtai and Myers (2014) and gain entrance and acceptance in one day. In my case, I gained easy access and considered a member of the communities because I was an insider-researcher, who has knowledge of the culture and language of the people, and experiences of what it means to be poor and marginalised.

My point manifests itself in how I negotiated and access the research sites. For example, in gaining access to a local tea shop in Wellington, where I have previously lived between 1995 and 2000, I walked in one evening, took a seat and requested for a cup of a locally made green tea. After sitting for about an hour, I noticed that most of the visitors knew one and another, given the ways the collectively interact. I was the only stranger in their midst. I noticed this by a strange look at me by a majority of them. To resolve the strange situation, I walked to a young man whom I believed was the owner of the shop. He was dressed in a blue t-shirt, standing close to a high wooden table at the extreme left end of the shop. I introduced myself and explained to him the purpose of my study. I then handed him the ethical clearance note and informed consent form. He looked at them for a while and said to me *"no problem brother you are welcome in our shop"*. To my dismay, he quickly introduced me to the people in the shop and asked for their cooperation.

Interestingly, as the fieldwork progressed, two important things happened. First, I became a full member of the shop, and offered a role to prepare and serve the tea. This depicts a typical participant observation practice in traditional ethnography, where ethnographers simultaneously participate in the daily activities of the research subjects and write an account of their lived experiences (Atkinson & Hammersley, 1995; Berry, 2011). Second, the owner became an advocate and mediator to help me recruit some of the participants that I interviewed. Similar pattern of relationship was also experienced in other settings in both Wellington and Tombo. Certainly, my experience led to what Fetterman (1998, p. 33) echoes, "the closer the go-between's ties to the group the better...The trust the group places in the intermediary will approximate the trust in extends to the ethnographer at the beginning of the study". Indeed, the trusts built with the gatekeepers reflected positively in my relationship with the research participants. I was able to build rapport and garner an increasing support from the participants in all settings. Apparently, this opened a myriad of opportunities to interact with the research participants on their mobile phone usage behaviour and experience.

In many ways, the strategies adopted during the community entry phase and throughout the fieldwork were informed by my familiarity and intuitive tendency to negotiate and immerse in the daily activities of the people (Mabweazara, 2010; Chughtai and Myers, 2014). In part, my prior knowledge of the culture of the helped me gain easier entry during the early immersion in the field. As an insider-researcher, I understood the norms and practices of the research subjects and communities under research. Usually, some ethnographers may spend days or months to learn the culture and language of the people in which the technology is embedded, so they can give an adequate account of the situation under study (Fetterman, 1998; Berry, 2011; Schultze, 2000). In my case, it took me less than a day to enter and become a member of the research participants' communities. I quickly built rapport and gained trust, which facilitated the access to in-depth information about their lived experiences around mobile phone usage.

However, it is important to note that familiarity can also be problematic in ethnography. It can compromise the research outcomes because researchers may rely on their pre-knowledge and relationship with participants to make unsubstantiated judgements or predict outcomes (Chughtai and Myers, 2014). In my case, I negotiated the effect of familiarity on the research outcomes by continually drawing a clear boundary between being a member of the community and as a researcher. This conforms to the principle of critical ethnography, which allows the researcher to step outside his cultural background and establish dialogue and guidelines with the people in the research setting (Myers, 2009; Krauss, 2012). Through this process, I was able to address the core problem of how to both observe objectively and be actively part of the problem being observed (Hutchinson, 2012).

All in all, this self-reflective process adopted in the early immersion phase and during fieldwork differs from Krauss' (2018) notion of 'false belief'. Krauss' (2018) false belief emanated from unarticulated misunderstanding of the people's culture portrayed in the early immersion phase in the ICT4D ethnographic field in South Africa, while mine emerged from having prior knowledge of the culture of the people and the nature and scope of the technology. Thus, my experience suggests that having knowledge of the culture, forms of technology, and the level of technology adoption can influence how ethnographers enter a research field. In this sense, ICT4D ethnographers focusing on the introduction of a community ICT project may enter a research community differently (e.g. Krauss, 2018; Kleine, 2015) than those who examining the general ICT usage or ubiquitous technology such as mobile phones (e.g. Horst and Miller and Power, 2012).

Observing and Gathering Data

My decision on what to observe during fieldwork was influenced by a number of factors. First, what to observe was determined by the research objectives, research questions and the theoretical approach adopted to learn and understand about ICT and development. Second, it was driven by the events or situations that unfolded at a giving time during observation. This included continuously observing, recording, reflecting and making sense of what the participants were saying and doing (O'Reilly, 2012). Finally, my intuitive tendency and aspects of my lived experience also enabled me to observe and

identify with the participants' communication and behavioural patterns around mobile phones (Berry, 2011). In general, I adopted an inductive, reflexive approach in the observation processes, building on Spradley's (1980, p.73) three observation techniques: descriptive, focus, and selective observation. These three observation techniques provided a useful guide for collecting detailed and rich data that were important for an in-depth and holistic understanding of the research problem under study. In particular, they provided the framework to generate data to explain the complexity involved in negotiating the access to mobile phone technology, key actors, use and implication on people's livelihoods.

According to Spradley, a researcher should adopt the three observation techniques systematically while doing an observation. Each technique should be informed by the outcome of an analysis of the observation data and identification of follow-up or further questions. However, I did not strictly follow these observation patterns as Spradley (1980) suggested. Rather, I systematically employed the techniques in an iterative format. As depicted in Figure 1, every observation carried out was followed by a written field note and reflection to inform the next observation phase (Neuman, 2006).

I started with the general observation method to set the stage for building rapport and capturing the broader context of the socio-culture milieus of the research participants. This observation, commonly refers to as 'descriptive observation', provided the basis for a thick description of the social situation and the broader understanding of the everyday practices of mobile phone usage (Geertz, 1975). The observation was informed by questions that identified major features of the settings and described major things that took place, behavioural acts or activities such as the feeling that people had and the goals that they intended to achieve in their everyday routines (Spradley, 1980). The descriptive observation focused on questions such as how the participants interacted with each other in their social settings and their experiences in adopting and using mobile phones differently to articulate their everyday routines. Another important aspect the descriptive observation technique also offered was the ability for me to reflect on my actions during the observation. This included describing where I went, what I did, where I sat, how I overheard things, and who I saw. Descriptive observation generated general descriptive data to inform the focus observation.

The focus observation led to an in-depth investigation. During the focus observation, Spradley proposed that researchers should ask structural questions to direct the research process. In my case, questions asked were directed to capture the in-depth knowledge of marginalised young people's experiences of mobile phone use in their everyday world. For example, questions asked included how do they make livelihood choices, how does the use of mobile phones influence these choices, and what meaning does it make to them in relation to their well-being?

Apart from the descriptive and focus observation, the selective observation posed contrasting questions with the view of understanding the differences or similarities in activities in the settings or the meaning people associate to mobile phone usage (Spradley, 1980). For instance, in observing the communication patterns of the research participants, I asked why people use different channels for different communication purposes and what differences would it make if face-to-face communication is used instead of mobile phones. In this case, the contrasting questions led to a selective observation, wherein I focused on the differences that existed in the communication patterns of the participants.

Further, part of the observation process included engaging in informal discussions on one-to-one or group basis to discuss and clarify emerging topics from the participant observations. This was aimed to acquire an in-depth understanding of the emerging topics from multiple views of the participants. As Brewer (2000) notes, informal discussion provides 'access to people's meaning-endowing capacities and produces rich data, that come in the form of extracts of natural language' (2000, p. 66). I used this technique often to elicit data from people on topics that needed further input from the participants. For example, after analysing the observation notes, I noticed a consistent pattern pointing to an increasing use of the phrase 'flash call' among all the five categories of marginalised young people mentioned earlier. I wanted to further understand from different perspectives how it was done and what was responsible for this behaviour. I organised an informal discussion groups around

this topic in the research settings. The outcome of these discussions generated interesting topics (e.g. saving cost, requesting information and expressing love). These topics were later included in the focused group discussions and semi-structured interviews to elicit an in-depth understanding. The overall principle here is that in ICT4D ethnographies, the focus of participant observation and the questions asked during the process should be directed towards generating data that could help explain development through ICTs.

Writing Field Documents

Field documents are critical parts of ICT4D ethnography. By documenting several sources of data, ICT4D ethnographers can make sense of stories and present key issues for sustainable ICT usage and development (Krauss, 2012). Throughout the fieldwork, I gathered and documented many stories, observations and quotes from the research participants. In line with the ethnographic approach, research data were grouped into field notes, personal diary and memos (Neuman, 2006; Atkinson and Hammersley, 1995). The field notes comprised of jottings, extended notes and analytical notes. Ethnographers use jottings to record brief accounts of what they see or hear during participant observation (Atkinson and Hammersley, 1995). Jottings are written in the context where the documentation of the full account of the observation is impossible (Neuman, 2006).

In my case, writing jottings was almost an impossible task to achieve. A large segment of my participants were illiterates. As a result, I experienced high resistance against writing jottings during observation. Writing jottings was seen to be sometimes intimidating, and to a large extent obtrusive to some participants (Atkinson and Hammersley, 1995). The Tombo case offers a very good example. One Thursday evening, I was at the Tombo wharf for an observation. It was a market day, and the wharf was populated in a way that one could hardly move from one point to another. I took a spot in front of the harbour master's office situated at the frontend of the wharf. As I observed and took jottings, three young women and a man in the late 20s approached me and asked, 'are you a journalist, why and what are you writing about us….?' While these questions may convey different meanings, they made me felt that the participants were very uncomfortable of me taking jottings about them. Indeed, confrontation of this nature was frequently experienced in other settings.

However, to overcome this challenge, I readjusted the note-taking strategy following Atkinson and Hammersley's (1995) recommendation that the 'conduct of note-taking must be broadly congruent with the social setting under scrutiny' (1995, p. 177). This strategy involved using mental memory, a mobile phone or a recorder to supplement note-taking. This strategy proved to be very instrumental for recording observations in the context where it was impossible to take jottings without being obtrusive to the participants. Here, one can see the importance of how I reflected and adjusted the fieldwork process to align with the social conditions and experiences of the research participants (Schultze, 2000). Despite being an insider-researcher, I was able to also acknowledge and reflect on my ignorance and mistake in ethnographic practice (Krauss, 2012). Hence, the lessons learned here is that ICT4D ethnographers should approach fieldwork with an utmost flexibility, ready to renegotiate or recreate alternative ways of observing and writing notes about the research subjects. ICT4D ethnographers should reflect on the contexts and experiences of the participants while making any critical judgements about observing and writing field notes in highly deprived communities.

Further, while the jottings provided short account, extended field note and analytical note are important documents to provide detailed descriptions and explanations of what is observed and heard during fieldwork. In my case these documents were used to provide an in-depth description of field observations, develop ideas and interpret emerging concepts to inform the progress of the study. These notes were written at the end of every field observation. The content of each observation note was based on the specific fieldwork phase and the objective of that observation. For example, at the general observation phase, I engage in detailed description of the settings, including what people did, what they said, how they interacted and the descriptions of activities were provided. As the fieldwork progressed, my observation, as well as the field notes, became more focused. I linked the description and interpretation of concepts to key analytical ideas of the research problems under study. This provided

the means to develop relevant categories and themes used in writing the final ethnographic account of the study. At the end of the fieldwork, I gathered and documented several sources of data, including interview and group discussion recordings, policy documents, marketing reports, songs, text messages, press releases and detailed observation field notes (Myers, 2009).

It has been shown that a traditional ethnographic work also relies heavily on the subjective interpretation of the researcher (Fetterman, 2010). In this sense, my personal reflection on activities, behavioural patterns, attitudes and the meaning the participants made of their social world reflected in the field note, particularly in the analytical note. I also used this opportunity to write personal experiences in my personal dairy. The personal dairy was a useful document during this study. It was used to explain the emotions, experiences and personal judgment about the day-to-day activities in the field (Neuman, 2006). At the end of the fieldwork, this document became an important reference point and reminder for certain events that unfolded during the field that were useful for informing the final analysis of the research.

Finally, writing memos is a very important exercise in the fieldwork process. I used memo in my study to direct and inform me about the events that needed to be studied or required further investigation. It was also used for concept mapping—that is, to direct the analytical process by summarising, synthesising and theorising concepts that needed to be integrated into future analytical documents (Neuman, 2006). Memo was written intermittently and sometimes periodically. It was written while reviewing field documents, conducting field observation, interviews or sometimes sitting and reflecting on the research work.

Conclusion

This paper has offered a reflective account of particularised principles for doing ICT4D ethnography. It reinforces that the increase in demand for ICT4D research to account for ICT usage and real impact on the wellbeing of the users makes ethnography an appropriate approach to confront conventional methodological boundaries in the ICT4D research. Despite the definitional inconsistencies that surround the term ethnography, I have shown that by aligning the ICT4D research with the media and digital ethnographic tradition, researchers are likely to provide rich and detailed ethnographic description of people experiences of ICT uses and the actual benefits it accrues in different socio-cultural settings in the developing world. Applying traditional ethnography to ICT4D research provides a framework that offers a degree of reflexivity to view technologies in social rather that purely technical terms (Mabweazara, 2010; Tacchi, 2014). I argue this is critical for capturing the rich and actual impacts that emerge from the users' interaction with ICTs in their social and cultural milieus.

However, despite the usefulness of traditional ethnography, employing it to ICT4D research is not without challenges, which I will now briefly consider. One of the challenges relates to the inappropriate application of the principles, practices and analytical framework of ethnography to ICT4D research. While ethnography is distinct in its epistemological and methodological approach, it shares common data collection methods with the broader qualitative research framework. Methods, such as interviews, observations and group discussions are used both in ethnography and other qualitative research approaches. While these methodological similarities cannot be denied, ICT4D researchers should acknowledge that by simply including participant observation and in-depth into an ICT4D research framework does not warrant the ethnographic label (Tacchi, 2013). As argued by Tacchi (2013, p. 73) and also demonstrated in other studies (e.g Burrell, 2012; Horst & Miller, 2006; Krauss, 2012; Powell, 2014), ICT4D ethnography should be 'positioned within an emerging ethnographic tradition of studying media and digital technologies, and to a large extent provide 'thick description ' of the issues under study without any forms of constraint.
The challenge for most ICT4D studies to satisfy these ethnographic requirements can be located within the methodological dichotomy that underpins development impact research. In general development research is associated with two research methodological frameworks: result-based accountability model and reflexive learning approach (Lennie & Tacchi, 2013, 2015). The

accountability model is the dominant framework that involves the measurement of predetermined indicators and objectives to document ICT4D projects' effectiveness and accountability (van de Fliert et al, 2017). The reflexive learning approach, on the other hand, provides a way for integrating an ongoing learning process into evaluation processes of some ICT4D initiatives, with the aim of facilitating sustainability and long-term impact of the interventions (van de Fliert et al, 2017). Lennie and Tacchi (2013) demonstrate that most development research agendas are largely driven by the accountability model because of its usefulness to generate fast and numerical outcome to inform development impact and accountability decisions. Therefore, I argue that because ICT use is spontaneous, individual base and socio-culturally embedded, any ethnographic studies that attempt to conform to the demand for short-term outcome reports and pre-occupation of result-based accountability model may be constrained. As I have shown throughout this paper, ICT4D ethnography involves the embeddedness of a researcher into the natural milieus of the poor and marginalised to observe, listen, interrogate and describe in detail and verbatim the ways in which ICT is experienced in use. In this regard, we have seen studies that are unconstrained by the requirement of speaking to development agenda provides richer ethnographic description compared to those driven by the same agenda (e.g. Burrell, 2012; Kleine, 2013).Therefore, it is likely most ICT4D research that conform to the accountability model can be constrained by the development agenda that inform such studies.

Note

1. Sierra Leone is a former British colony and part of the Anglophone West Africa region. It is one of the smallest countries in the region. The country covers a total area of 73326 sq. km with an estimated population of 7 million, and young people constitute about 34 per cent of this population (Peeters et al., 2009. Since independence, the country has experienced a considerable decline in social-economic indicators and extreme poverty emanating largely from years of bad governance, weak social and economic structures, attitudinal problems, disease burden and ten years debilitating conflict that claimed thousands of lives and properties (Sam, 2017).

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