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Application of Digital Technologies in Qualitative Research Data Collection

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Abstract

Due to the COVID-19 pandemic and quickly changing digital society, people have grown accustomed to transmitting at least some of their routine contacts and communication online via a range of platforms and applications. Technological developments in communication have created new avenues for qualitative research. Along with this pandemic, social distancing and location distancing have been minimizing in-person interview opportunities. In this article, we illustrate some instruments for online data collection by using digital technologies rather than face-to-face interviews. The digital platform will be helpful for the researchers in data collection from the respondents who live in different places as well as it will minimize the data collection cost and time. Researchers can collect online data through Zoom, Skype, and Google Meet with video conferencing facilities. In this case, video conferencing can be a sound source for observation and taking notes during the interview sessions. Moreover, audio-visual data can be collected by telephone interviews and using other social media such as WhatsApp, Viber, Imo, Facebook Messenger, and Phone calls with recording using some digital apps and software. This study has significant practical contributions in the area of qualitative research and mixed-method research. This study reviewed some digital technologies that can be used in qualitative research data collection as well as mixed-method data collection. Researchers can utilize these platforms in data collection which will reduce the research cost and save time. Lastly, it will make the data collection process smooth and faster.

Keywords: Digital Technologies, Qualitative Research, Interviews, Data Collection

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Introduction

Due to the COVID-19 pandemic and our quickly changing digital society, people have grown accustomed to transmitting at least some of their routine contacts and communication online via a range of platforms and applications. Technological developments in communication have created new avenues for qualitative research. While the epidemic offers a singular opportunity to examine the issue directly, requirements of social distance or location distancing are limiting conventional in-person inquiries of many kinds (Gray et al., 2020).

With the progress of technology, qualitative researchers are utilizing software for data processing, bibliographic production and storage, and the Internet for doing literature reviews (Redlich-Amirav & Higginbottom, 2014). Researchers first used phone interviews (King & Horrocks, 2010) as an alternative to traditional in-person interviews. More recently, they have used internet technologies such as emailing (James, 2015; Mason & Ide, 2014), instant messaging (Stieger & Göritz, 2006), and chat rooms (Shapka, Domene, Khan, & Yang, 2016). With more people in developed and developing countries having access to Internet services, researchers may now weigh the benefits and drawbacks of video conferencing software (Fielding, 2010; Nehls, Smith, & Schneider, 2014).

Given the current COVID-19 pandemic, qualitative researchers are confronted with both distinctive opportunities and challenges. According to the editorial of Teti et al. (2020), the pandemic is a "social event that is disturbing our social order." Researchers must investigate the real experiences of people navigating these difficult times. Our capacity to conduct these studies is also being hampered by social distancing policies and public health regulations (Lobe et al., 2020).

Furthermore, a lot of us who are working on research projects unrelated to the epidemic are being compelled to go from collecting data in person to gathering data over the phone or online. Although there is a wealth of research on internet-based data gathering (Fielding et al., 2016; Kanzaki et al., 2004; Pang et al., 2018; Shields, 2003), an updated guide is necessary due to the rapidly evolving technical landscape. In this piece, we outline the choices and tools available to researchers who must switch from in-person qualitative data collecting to an online approach for their studies. We examine the most recent audio and video conferencing services that are available to researchers for data collecting, even though technology is always changing.

This study aims to assist researchers who want to move from in-person to video-based and audio-based online interviewing. Since online video and audio modalities are more akin to in-person interactions than voice-only or text-based choices, we have opted to concentrate on them. In this paper, we use digital technology to demonstrate a few tools for online data collecting in place of in-person interviews. The digital platform will be helpful for the researchers in data collection from the respondents who live in different places as well as it will minimize the data collection cost and time. Researchers can collect online data through Zoom, Skype, and Google Meet with video conferencing facilities. In this case, video conferencing can be a sound source for observation and taking notes during the interview sessions. Moreover, audio-visual data can be collected by using telephones and mobile phones and by using other social media such as WhatsApp, Viber, Imo, Facebook Messenger, and Phone calls with recording by using some digital apps and software. Digital interviews, however, may be more affordable and improve participation from a distance. Investigators employing technical issues, however, can occur and negatively impact the interview quality. More comprehensive data can be obtained from digital alternatives than from in-person options when it comes to sensitive topics (such as victimization, health difficulties, and sexuality), but it might be challenging to interpret visual clues because the camera only records the participants' upper bodies (Thunberg & Arnell, 2022).

Methodology

Instead of focusing on social structures, qualitative researchers choose to demonstrate and investigate social concerns. They are better suited to comprehending the true nature of human interactions, as well as the meanings and processes that create the actual organizational environments (Alam, 2021). Nonetheless, the qualitative approach is

increasingly being used in social work research to establish connections and learn about participants' real-world experiences with the phenomena. Conversations informally, although qualitative research provides unique chances to develop comprehension from the perspective of the informant, nevertheless suggest a fundamentally subjective undertaking. Throughout the entire process of a qualitative research study, the investigator serves as the analytical instrument (Starks and Trinidad, 2007). When researchers need to comprehend the situations or contexts in which participants, responders, or objects can address or explain a problem or issue, researchers must perform qualitative research. Readers can learn something new from qualitative research and most likely come up with meaningful answers about the phenomenon (Islam & Aldaihani, 2022).

To fulfill the study's objective, a thorough integrative research review was carried out. This study applied library research to investigate the application of digital technologies in qualitative research interviews. The authors critically reviewed prior empirical and review papers to accomplish the research objectives. Integrative reviews are somewhat exploratory since they incorporate several study designs employing experimental, non-experimental, empirical, theoretical, qualitative, and quantitative methodologies (Booth et al., 2016; cf. Petticrew & Roberts, 2008).

Digital Technologies Mostly Applied in Qualitative Research Interviews

Essential Prerequisites for an online interview

Potential participants must fulfil specific technical and logistical requirements for each of the videoconferencing platforms discussed later in this article to participate.

Internet access: The first prerequisite is having internet access, whether through a computer or another acceptable digital device such as a mobile phone or tablet. Internet speed: Although the strength of the internet connection is important, most video conferencing software may be used with average-grade connections.

Related accessories: Participants must have a camera, microphone, and speakers that are in working order. Most of these devices are already built-in when using a laptop, tablet, or smartphone, although desktop computers may need headphones and an external camera to be plugged in before participation. Most importantly the strong bandwidth is another necessary thing that has to have to the participants as well as the host.

A headset, however, can be helpful to provide additional privacy throughout the talk even on mobile devices. To ensure there are as few interruptions and disruptions from their surroundings as possible, the third logistical requirement is for participants to be in a peaceful spot. The researcher's ability to regulate an interaction declines in online encounters where participants and the researcher are geographically apart. A participant should get a set of instructions, including requests to reduce disrupting elements, close other potential applications and social networking sites, silence phones, and other instructions, to ensure successful moderation (Morgan & Lobe, 2011).

With the use of video conferencing software, two or more people can interact in real time via audio and visual images (Gough & Rosenfeld, 2006). While the specifications for video conferencing software may vary, they usually call for a certain piece of hardware, software, and high-speed Internet connectivity. Researchers and participants can choose to hardwire their PC to the Internet or use wireless Internet to connect to their preferred platform via a computer, smartphone, or tablet. The researcher can select from a variety of video conferencing platforms, such as Highfive Meeting, Eyeson, Zoom, Zoho Meeting,

Skype, Google Hangouts Meet, GoToMeeting, Cisco WebEx, and Google Hangouts Meet (Gray et al., 2020). The researcher must choose the platform that best suits their demands out of the many that are available, taking into account factors like budget, platform comfort level, administrative possibilities, and user convenience. Some video conferencing programs, like Skype, are free to use but need program downloads for both the participant and the researcher. Other programs, like Zoom, merely require the researcher to download the program; it is a free basic version that may be upgraded for a monthly or annual charge. Another service is Google Meet. If they so want, the participants can download the software on their computer or the mobile application to their phone (Gray et al., 2020).

Google Meet

Google is making professional video conferencing accessible to all users where the virtual meetings and interactions are held. Previously, it was known as Google Hangouts where people can make a conference call and at any time, they can do chat chats. As an interviewee, it seems to be one of the most useful applications for taking interviews.

Here, anyone could be able to take the interview by sharing the Meet link with the interviewers. Those links could be sent instantly or by scheduling according to the participants' convenient time. If the interviewer has a Gmail account Google, there were no restrictions for the interviewer or interviewee to sign up in the Meet app. It was the simplest way for the users to join in the interview (with a stable internet network) without any hassle. The sessions could also be stored in Google Drive for future reference or use. Gmail Web, IOS and Android apps, and Google Calendar are also supported here. Participants could blur their backdrop if they needed to and felt more comfortable. When any disruption happens, the host (I, the researcher), can remove the participants at any time and again allow him/her to join in the same meeting link. Besides, it was helpful to collect information by sharing the Screen Share option of Google Meet. Besides, no unwanted ads popped up on screen at meeting time which helped a lot to hold the concentration on collecting information from the interviewers.

In terms of participating in the meeting on Google Meet, at one time 100 participants can join in the meeting for no time limit at no cost. If more people needed to join in one meeting, then, the option was to buy a plan at a few price.

Zoom

With the help of built-in communication capabilities, Zoom Meetings, a cloud-based video conferencing software solution, it is possible to have virtual meetings and interact in real-time. Zoom is free to use for the participants or the host and very easy to use in terms of qualitative research as well as any conferencing. Schedule making for joining in meetings to samples (participants) according to their free time is easier here.

There are two ways to start the meeting, one is creating an account from a website and the other is signing up in Zoom App by downloading the app. After signing up in Zoom, we can send the meeting link to the participants by sending their information in their mail (which was mostly the scheduled interview according to the participant's and hosts' (the researchers') availability. Participants had to click on the Meeting Tab to join here.

Unlimited one-on-one interview sessions for up to 2 participants and the host are possible with the Basic free plan. In the Basic free account, adding more people restricts the duration of every session to 40 minutes, while the Pro plan, available for a low monthly fee (around 150 USD per year), allows for up to 100 participants during an endless session (support.zoom.us, n.d.). The best part of the Zoom application is that there is a recording

option in the Pro plan subscription, so, as a researcher, it's a huge advantage for us to record the interviews for future evidence or future usage (taking youth the permission or consent of the participants). Virtual Background is another feature that can be used by any participant or the host when they want as they were in their house with families or someone else who may not be comfortable with video conferencing.

Skype

Since Skype uses Voice over Internet Protocol to deliver free audio and video calls, it is technically distinct from the first two platforms. It was generally used in research before other video conferencing tools because of its widespread use. Because it is so prevalent in interpersonal communication, it is frequently the first use that people consider when considering taking focus groups and qualitative interviews online. Even though it may be downloaded to a computer or used in a web browser. Skype is susceptible to problems with internet access quality; therefore the downloadable version performs better than the browser-based one.

Participants can join in the meeting if they have a downloaded Skype account on their phone or browse from a website login. It makes it simple to record audio and/or video and alerts the presenter to the need to obtain participants' authorization before clicking the record button and the record can then be downloaded locally and is kept in the Skype sessions cloud for 30 days. The host sends the link to the participant or participants and with one click access, they can join the interview session which is very easy for them.

It's a method used worldwide most frequently because of its free version. While using Skype, anyone can do one-to-one interactions or one-to-many interactions. In the free version, researchers can take 100 people in one for audio or video conferencing on any device whereas the premium version allows 250 people. The researchers also noted that during the COVID time, participants were mostly interested in giving the interviews online.

Skype (www.skype.com) Basic information: Since Skype is a voice through internet protocol service that offers free audio and video chats, it differs from the other two platforms in a technical sense. Due to its widespread use, qualitative researchers frequently adopted it before they did other videoconferencing tools (Cater, 2011; Deakin & Wakefield, 2014; Lo Iacono et al., 2016; Sullivan, 2012). It is frequently the first application that springs to mind when people think about conducting focus groups and qualitative interviews online since it is so extensively utilized in interpersonal communication (Lobe, 2017). Skype works best when downloaded rather than when used in a web browser, even though it can be used in a browser or downloaded on a computer. This is because Skype is susceptible to problems with internet access quality (Lobe, 2017).

Complications of video conferencing for an interview in a nutshell

It is impossible to simulate the nature of a true face-to-face encounter, even though video calls are convenient since these video conferences allow for visual contact.

- There are many nonverbal cues that individuals use to communicate with one another that does not always pick up on. So, the miscommunication occurred because the non-verbal cues had been overlooked.
- When we used Skype, the problem was that the participants had to install the Skype app on their devices like mobile phones or tablets and many of them did not know before participating on their phones.

- The quality of a Skype call will be impacted by users' ISPs' slow internet speeds. The call must have sufficient bandwidth and a good microphone, or else the information that is transmitted is sluggish and garbled.
- Background noises of the participants or the hosts were picked up very easily on Skype.
- Zoom application has a worse part which impacted negatively on many participants who knew about the cyber-attack of Zoom application. Because, when people use Facebook or Google accounts which gives them access to Zoom to collect information from them (Gloor, 2021).
- A big trouble I faced in terms of using the Zoom application for interviews was that participants who did not download the app while trying to join from their phone or tablet had to have the downloaded Zoom App on their device.
- WhatsApp's call drop is another problem for an interviewer which prevents the flow of interviews of interviewees. It is because of the User Datagram Protocol (UDP) which isn't configured properly and prevents the functioning (faq.whatsapp.com, n.d.).¹
- When an interviewee wanted to give the interview on Viber, it took a lot of space as the heavy space needed for it to function properly was hampered in terms of taking the interview.
- The experience was worse when I took the interview on Imo because many advertisements popped up on the screen when I was taking the interview on this application.
- In Google Meet, sometimes the blank screen showed while the screen was sharing and permitted one screen share at one time (no other participants could share when one was sharing the screen). The other domain participants were not allowed to join the Google Meet meeting.
- The limited participants could view the screen when they were sharing their video in the meeting.
- Audio applications such as WhatsApp, Facebook Messenger, Mobile Call, etc. could not show the participant's body language or movements or facial reactions instead of oral connections which was a disadvantage in terms of collecting information.

Audio applications

There are so many applications that are used in Bangladesh in terms of voice connection or voice call. WhatsApp, Imo, Viber, and Facebook Messenger are the commonly used online applications for connecting with people. A phone call is another very frequently used method to reach up to the samples of the research. Here, the basic difference between these online applications needed the internet connection to continue for both the researcher (host) and participants (samples), and to continue phone call interviews or interactions, it needed sufficient balance for the person who is calling to another.

Participants have to just pick up the call coming from those applications having stable network connectivity. Here, both in online and offline applications, two or more people could join. Participants had to have an account on Facebook/Viber/ Imo/WhatsApp.

Conclusion

Researchers who conducted a comparison between in-person and online video conferencing interviews discovered that while online participants were more open and expressive, the quality of the interviews was not different from in-person interviews (Cabaroğlu, Basaran, & Roberts, 2010; Deakin & Wakefield, 2013). According to Mabragaña et al. (2013),

¹ faq.whatsapp.com. (n.d.). *Why am I experiencing issues with WhatsApp Calling? | WhatsApp Help Center.* [online] Available at: https://faq.whatsapp.com/630932794169732/?locale=en_US [Accessed 31 Jul. 2023].

participants expressed a preference for their interviewer to live in a distant city as it reduced the likelihood of interactions in public. The researcher should be mindful that building and establishing rapport with participants may appear different with video conferencing interviews than it does with in-person interviews, even if participants may be more forthcoming and expressive (Deakin & Wakefield, 2013). The researcher's disposition and degree of technological comfort may have an impact on their capacity to develop reports. Deakin and Wakefield (2013) discovered that during certain video conferencing interviews, rapport was established more quickly than during certain in-person interviews. They added that those who answered more subtly could find it harder to establish rapport. To foster rapport, Deakin and Wakefield (2013) advised sending multiple emails before the video conference interview. In this instance, conducting interviews online saves time for participants and researchers.

The investigator must take into account if the research methodologies chosen are appropriate when doing any type of qualitative research. For instance, when using video conferencing software, researchers will take into account potential technical issues and assess whether they have the necessary abilities to conduct interviews on a virtual platform, much like they would when considering the physical space and audio and video recording devices needed for in-person interviews (Rowe, Rosenheck, Stern, & Bellamy, 2014). Digital platforms, in our opinion, will be helpful for study on remote data collecting since they will save costs and participants' and researchers' time.

Practical Implications of this study

This study has a significant practical contribution in the area of qualitative research and mixed-method research. This study outlines some digital technologies that can be used in qualitative research data collection as well as mixed-method data collection. Utilization of these platforms in data collection will reduce the research cost and save time. Lastly, it will easier the data collection.

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