Chapter 23:

Quality Matters and Ethics in Distance Education Research

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Introduction

The COVID-19 pandemic and resultant social distancing regulations directly affected the mode of data collection for many researchers. Researchers had to switch from standard face-to-face research methods in education contexts to remote-based research supporting continued research (Chu et al. 2020). The situation has made distance education and research in this field more prominent. Even before physical distancing measures came into place, distance education research gained prominence (Rolfe 2015). Since the advent of the COVID-19 pandemic, with the infection risk and taking into account the circumstances of the data collection, it is clear that alternative and innovative ways of conducting research will have to be used. The new research methods must replace existing methods of interacting with the community, procedures for obtaining consent and the sampling frame, data collection, and communicating the outcomes to key stakeholders. With this shift, the question of quality and ethics are even more important. How do we ensure high quality and comply with ethics guidelines under the circumstances? There is growing importance, more than before, for researchers to be ethically and legally aware (Schöpfel et al. 2020: 2), and this new mindset and associated practices should be adequately represented in models. In some instances, 'research information management systems designed to assess [high] performance and contribute to the steady improvement of research' are put into place (Schöpfel et al. 2020: 1).

Distance-based research is defined as 'the collection of data via the phone, online or on other virtual platforms, with study participants and researchers physically distanced' (Hensen et al. 2021: 360). These methods, incorporating telephone and postal surveys, have been used before by prosperous countries. However, these were used during the COVID-19 pandemic era to support collecting data directly from individuals and populations also in developing contexts (Gibson et al. 2017).

Distance-based research has many benefits, including supporting more participants in a group (Gelinas et al. 2017; Reuter 2020), allowing contact with students in geographically remote areas, offering anonymity to participants with sensitive or stigmatising circumstances or viewpoints (Bender et al. 2017; Saberi 2020), and ensuring that public health measures are adhered to during the pandemic (Byrd et al. 2020).

However, recruiting participants and collecting data utilising these distance-based methods raises different ethical dilemmas than research in which face-to-face interactions are possible. These dilemmas occur in relation to issues such as informed consent, ensuring participants' anonymity and privacy, and supporting identity construction and authenticity (Arigo et al. 2018; James and Busher 2015). Ensuring confidentiality, anonymity, and informed consent depends on the mode of interaction between researchers and their subjects. That is to say, changing from face-to-face to remote data collection requires careful application of principles of rigour to judge the quality of the research by reviewing 'reflexivity, adequacy, authenticity, trustworthiness, and resonance' (Cristancho et al. 2018: 14).

The latter principles hold specific implications for digital data storage and protection that must be set out in a full data management plan. For instance, it is not sufficient to produce adequate and robust data through remote digital means (adequacy). Researchers must ensure that the data collection and analysis are accomplished systematically and described succinctly (trustworthiness) and comply with the country and local institution's research governance procedures (Fielding et al. 2016).

However, the basic principles of offline research also apply to online research. This means that although distance-based data gathering may provide additional ethical challenges than in a face-to-face context, ethics in the latter environment also apply to distance education research. It is nevertheless evident that each medium of research provides different challenges that researchers need to accommodate.

National and international acts have been promulgated to regulate and guide data processing and collection stakeholders, whether the data was collected face-to-face or through a distance medium. In South Africa, for example, the Protection of Personal Information Act (POPI Act) oversees the collection, processing, and access to personal information (POPIA, 2018). Internationally, the UN Declaration of Human Rights, the Belmont Report, the Declaration of Helsinki, and the Nuremberg Code provide the necessary framework (Kandeh et al. 2018).

The POPI Act stipulates various conventions that govern the handling of personal information. Although the POPI Act provides comprehensive protection of individuals' privacy, it raises questions

for researchers who conduct distance-based research. These challenges arise because the POPI Act is generic rather than providing specific and sufficient guidance for all forms of research such as distance-based research (Katurura and Cilliers 2016; Viljoen and Cilliers 2019).

Although face-to-face and distance-based research are subject to the same ethical principles as mentioned earlier, the rapidly developing internet-based strategies used for the latter mode of research compels ethical committees, management structures such as policymakers, and institutional ethical review boards to face new ethical challenges and grey areas emerging in distance-based research. This means that context-dependent solutions for these challenges are required for internet-based research (Eynon et al. 2017; Kanzaki et al. 2014; Pang et al. 2018). However, there is a lack of literature on ethical challenges and quality assurance requirements in distance-based research (Rolfe 2015). For this reason, a systematic review of relevant literature on ethical challenges in distance-based research appears to be imperative. This chapter therefore aims at addressing the following two key research questions:

- What are the current trends, grey areas, and ethical challenges in distance-based research?
- What key ethical values underpin remote-based research?

The following framework based on ethical values will guide the research in this chapter.

Literature review

Ethics prescribes the morals or rules of conduct (Felzmann 2013) and the concept of research ethics is usually applied broadly and inclusively. DuBois and Antes (2018: 550) define research ethics as 'doing good science in a good manner'. As such, good science implies research underpinned by 'common standards of excellence, while a good manner includes, among others, appropriate data storage, management of conflicts of interest, protection of human participants and animal subjects, honest reporting of findings and proper citation of sources' (Schöpfel et al. 2020: 2). Studies in research ethics identify many different ethical aspects and principles 'applied to scientific values and rigor like honesty, objectivity, integrity, carefulness, openness, trust, accountability, respect for colleagues and intellectual property, confidentiality, fairness, efficiency, human subject protection, animal care, etc.' (Schöpfel et al. 2020: 2). According to Schöpfel et al. (2020: 6), 'research ethics is a multidimensional concept, with normative ethics (what is right and wrong, informed consent,

harmfulness, etc.), but also other aspects such as reproducibility, trust (accountability) and social value (importance and relevance for society)'.

The ethical weight and consideration in quantitative research are mostly set up at the planning stages, usually for 'sources, data recording accuracy, integrity, and fidelity' (Agunloye 2019: 169). Qualitative research normally collects data in closer, more personal, and invasive circumstances. The ethical dynamics may interact at varying speeds and levels during the real-life interaction stage of the research. Here, the importance and priority of ethical considerations are mostly determined during the interaction stages depending on the context and objectives. Ethical concerns must be determined during the initial planning and actual information-gathering phase of mixed-method research (Agunloye 2019: 169).

When planning and implementing research online, the ethical issues encountered are not different from when conducting research via traditional tools (Rodham and Gavin 2006). The Association of Internet Researchers proposed guidelines stating: 'Research ethics is not a list of checkboxes on a form to tick before undertaking a study but a process which requires deliberation throughout the study, including design, data collection, analysis and dissemination' (Yeshua-Katz and Hård af Segerstad 2020: 6). Markham argues that methods and ethics are interconnected and cannot be viewed in isolation; they are inextricably intertwined. Markham and Bride (2006, as cited in Hård af Segerstad 2020: 6) hold that 'studying vulnerable individuals and closed communities online further highlights the necessity for research to be case- as well as context-sensitive and for the researcher and the research design to be flexible and adaptive'.

Three main ethical challenges facing distance-based researchers can be identified from the literature.

Confidentiality in distance-based research

In distance-based research, breaches of confidentiality can occur during data transmission and storage (Fielding et al. 2016). Researchers often use third-party tools, such as an online communication medium, that can influence data movement. During transmission, interception is possible if proper measures such as end-to-end encryption are not in place. Moreover, Mehmood et al. (2016) highlight that encryption and decryption processes are still prone to data leakage.

In addition, when carrying out interviews remotely, it is hard to know who else is in the room at the time of the interview. Confidentiality may not be guaranteed if a researcher cannot control

the interview space. The safeguarding concerns are particularly acute when it comes to research on children. The power imbalance in any adult-child interaction is difficult to overcome, along with appropriate communication styles. As UNICEF notes: 'Special attention is needed to ensure each child's right to privacy and confidentiality ... and to be protected from harm and retribution' (UNICEF 1990: 1), which is harder to do remotely.

Informed consent

Informed consent is a universally recognised ethical prerequisite, requiring that research participants must be advised of all relevant aspects of the research, especially any possible risks to them, to allow them to provide informed consent. (Hibbin et al. 2018). The researcher must make individuals aware of the proposed research objectives and the way in which the research findings will be used before obtaining informed consent. All participants must be informed that they can withdraw from the research at any time. Participants must provide explicit consent and permission for the researcher to record, analyse, and report all data collected to participate in the research.

This process can be challenging as individuals can conceal their identity completely or partially on the internet, or even adopt an alternative identity. As an example, since the researcher is physically remote from the interactions, researchers might exclude individuals below sixteen years of age from the research. However, such individuals may misrepresent their age or fake parental permission and appear eligible to participate in the research. Unfortunately, the anonymity provided by cyberspace allows internet users to express themselves in ways that may be constrained in their real-world interactions (Chu et al. 2020).

The online environment, the platform for distance-based research, introduces additional complexity to the challenging issue of online research. The online interaction between the researcher and a potential participant, especially in text-based and asynchronous interactions, can make it more demanding to provide enough information about the research and what it will involve (Hutton and Henderson 2015; Metcalf and Crawford 2016).

Some ethical issues that are pertinent for all research, including distance-based research, are 'respect for persons (as the fundamental value), anonymity or pseudonymity, risks/benefits for participants, risks/benefits for the social good, public versus private space, subject compensation, justice, cross-cultural issues, special/vulnerable populations, deception, nondisclosure, conflicts of interest, and research misconduct' (Lobe et al. 2020, as cited in Ess and Hård af Segerstad 2019: page number needed).

Data storage

All research projects should comply with strict ethical procedures after collecting the data (Andersen and Cornelli 2018). Online data collection can lead to the creation of new issues over and above those found in traditional research, including de-identifying data and restricting access to it, ensuring that various research files, including transcriptions, the researcher's field notes, and the participants' personal data are protected through confidential passwords, and that sensitive data on the researcher's computer is encrypted. Audio-visual recordings must be deleted timeously (Linabary and Corple 2019).

The ethical principles described above are typically guaranteed in institutional contexts by enforcing the institutions' oversight rules and procedural directives covering research activities. These activities include data collection through surveys and interviews, the storage and use of personal data relating to individuals or groups, data analysis, and strategies for dissemination. However, such research activities also occur outside institutions using open distance research methods, public data, and technologies to collect and analyse data and disseminate findings. Ethical guidelines are inconsistent about how researchers should apply them, but the safety of participants, researchers, and research integrity remains paramount. At the same time, conducting distance-based research during a global pandemic presents new ethical issues that require reflection and responses (Byrd et al. 2020).

Role of technology

Technology can reduce the ethical challenges encountered in distance-based research methods (Anderson et al. 2017). For instance, participants might search for information about the researchers online to confirm their credentials. Individuals such as adolescents and persons with compromised capacity to consent, who may require additional support, can also quickly consult with knowledgeable sources about their participation.

Researchers frequently rely on technology to distribute information and consent forms before starting the research by email and willingly answer questions over email/phone/chat/video-conferencing. Multimedia presentations (for example, infographics) and data sharing with participants on free online platforms (McInroy 2017) may introduce the study and the researcher. Participants can access such presentations when convenient to familiarise themselves with the

study. Technology can also allow research participants to provide verbal consent, acknowledge their participation in a study, and agree that their questions have been answered (Marshall 2006; Wynn and Israel 2018).

However, many individuals, especially from marginalised and vulnerable communities, may not have access to email or social media, compelling researchers to obtain informed consent differently. These alternatives may include telephonic, verbal consent processes or collaborations with organisations or public libraries in their communities offering online access (Perrin and Turner 2017).

Finally, migrating to online research may address persistent concerns about individuals' perception of being pressured to participate when they attend an interview or focus group, despite assurances from the researcher that they can withdraw at any stage. Not having to commit to participation in a face-to-face situation by signing the consent document may minimise some of the perceived power differentials between all the stakeholders. The potential participants can choose not to respond to emails or end video calls, which is easier than walking out of a research site. The phenomenon is further clarified by transactional distance in research.

Theory of transactional distance

According to Kotzé (2021: 12), 'the theory of transactional distance offers an all-embracing pedagogical framework for distance education that developed from an inquiry of teaching and learning through technology in contrast with classroom-based theories'. Moore (1973, 1991) developed the concept of transactional distance, defining distance as a pedagogical distance instead of a geographical distance (Moore and Kearsley 2012). The transactional distance is determined by how much dialogue occurs between the researcher and the research participants (Gunawardena and McIsaac 2004). According to Tait (2017: 6), this theory is seen as 'one of the few distance education theories that can test hypotheses and serve as a heuristic device, a means of identifying questions for research'. Transactional distance might seem like a topic for distance-based research, but it is also present in traditional face-to-face research methods if there is little or no dialogue between the participants and the researcher. That is to say, the amount of interaction between researcher and participants determines the transactional distance. Increasing interaction in a traditional face-to-face research method might seem easier than in distance-based research. However, the emergence of web and social network tools, particularly, enables appropriate levels of

interactivity, dialogue, and connectivity, allowing researchers to manage the transactional distance originating from the lack of dialogue between the participant and researcher. Yet, these connective tools by themselves are insufficient to foster further interactions and dialogue between the participants and the researcher unless the required communication skills are implemented during the whole research process (Garrison 1989). Garrison (1989, as cited in Kotzé 2021: 13) claimed that 'distance education theory and practice have matured because of the growing sophistication of instructional technology since technology and distance education are inseparable elements within transactional education'. Technology is essential for distance education (Garrison 1985) but 'transactional distances in terms of access and usage of ICTs must be minimised' (Kotzé 2021: 19).

Methodology

A systematic literature review (SLR) was employed for this study. An SLR is a type of research that is viewed by scholars as being valuable as it is designed to identify relevant materials, appraise their contribution, and synthesise the most suitable data. Simultaneously, SLR also rigorously follows the standards of scientific procedures for scholarly work (Boland et al. 2017).

A search of empirical research on quality matters and ethics in distance-based research, published from 2018 to 2021, was conducted. The aim of the search was to identify all of the research studies with relevant information on current trends and grey areas, ethical challenges in distance-based research, and key ethical values that underpin remote-based research.

The following databases were searched: Academic Search and Academic Search Complete from EBSCO, the Directory of Open Access Journals, Google Scholar, and Sabinet. The search terms included distance education, online research, internet research, and remote and remote-based research. In addition, the keyword *ethics* was added to each of the terms in the search criteria.

Identifying eligible studies for inclusion in the review involved a process of selecting the titles and perusing and the abstracts that were highlighted in the searches. After identification, the whole article was analysed to determine its alignment with the inclusion criteria. The inclusion criteria were: (a) the study examined ethical issues in data collection; (b) the study assessed grey areas in distance-based research; and (c) the study compared ethical challenges in traditional face-to-face research and distance-based research.

Exclusion criteria included (a) articles that were not focused on quality matters and ethics in distance-based research; and (b) articles that were not published in peer-reviewed journals.

The figure below is the flow diagram for the process:

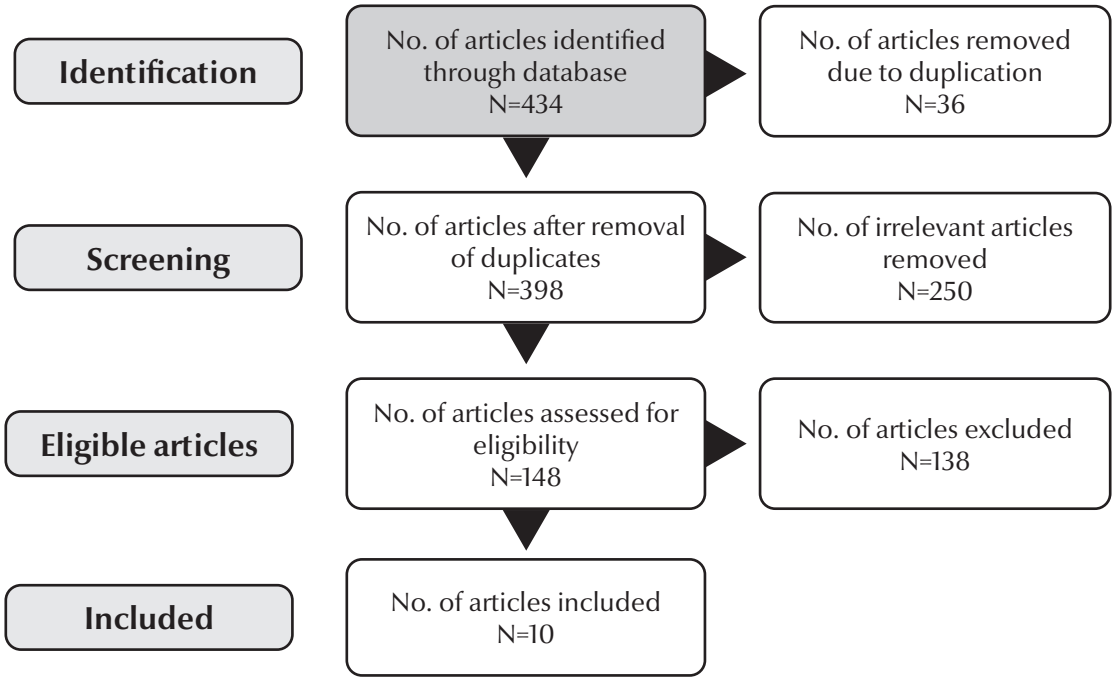

Figure 1: Flow diagram for the study selection

As depicted in Figure 1, a total of 434 articles were identified through the search. The abstracts were screened to remove duplicates. This invariably reduced the number of articles identified to 398. A further screening of the articles took place to remove irrelevant ones. This resulted in the articles being reduced to 148 out of which 10 articles were included for review.

Coding method

After identifying the relevant studies based on the inclusion criteria, a coding system that was broad enough to accommodate the studies was utilised to conduct the comparisons. This was done by applying the notion that the coding approach had to be broad but specific enough to distinguish between the identified studies (Özcan 2008). For this study, the procedure had two main sections

and six questions. The first section was called 'study identity' had three questions. . The section contains information such as the number of studies, the authors' names, the year and location of the study, and the publishers' names were included to define the study's identity. The second section comprised three questions and was entitled 'study content' (Özcan 2008). The section contained information about the study that examined ethical issues in data collection, whether the study assessed grey areas in distance-based research, and whether the study compared ethical challenges in traditional face-to-face research and distance-based research.

Data analysis and synthesis

The final search results identified ten articles, most of them quantitative, suitable for the review. Systematic reviews do not require aggregating study results to offer an average estimate due to diverse methodological approaches. As a result, narrative synthesis utilising thematic analysis was used to synthesise data in this study (Ritchie et al. 2014). Percy et al. (2015) describe thematic data analysis as a broad-based technique that is used to identify, analyse, and report the patterns presented by data.

Several steps were followed when synthesising data, using thematic analysis. The first step was the reading and re-reading of the data to familiarise oneself with the data while developing codes. An initial code from the data concerning the research questions was generated. Braun and Clarke (2006) define coding as a systematic classification method to identify meaningful data relating to the primary and secondary research questions. The next step involved searching for emerging themes to determine relevance. References to factors relating to quality matters and ethics were included thus creating the foundation for initiating an analysis of potential codes. During the development of the themes, the meaning of the different themes was described. Data that supported the answers to the research question and data offering the key s were searched for as part of the next step. This search offered scope for further development and review of the evolving themes. Some themes that emerged earlier were merged during this process, while other themes were compressed into smaller units. Lastly, all the themes and data captured were defined and named.

The ten papers examined in this systematic review study are profiled in Table 1 below.

Table 1: Profile of studies included for review

Studies	Type of scholarly article	Participant and sample	Reported ethical challenges in distance-based research	Focus of the study
Yavuz et al. (2020)	Review	Studies included N=22	Difficulty in establishing participant autonomy Blurred boundary between public and private spaces online	The direction of distance education research during the COVID-19 pandemic: A bibliometric and content analysis
Hensen et al. (2021)	Report	N=10	The participants must assume responsibility for privacy Challenges relating to developing rapport and trust with the participant Challenges in ensuring confidentiality	Ethical implications, challenges and opportunities of remote data collection for public health research in the COVID-19 era
Newman et al. (2021)	Report	N/A	Interruptions, evasion of privacy, poor rapport	Ethical considerations for qualitative research methods during the COVID-19 pandemic
Bamdad (2022)	Original qualitative research	N=15	Distrust in collaboration Privacy risks	Ethical challenges of social media enabled recruitment and online data collection in cross-border, social science research
Carter et al. (2021).	Case study	N=3	Difficulty in obtaining supporting consent Inadequate clarity and protocols for dealing with distress or disengagement	Conducting qualitative research online: Challenges and solutions

Studies	Type of scholarly article	Participant and sample	Reported ethical challenges in distance-based research	Focus of the study
Hooley et al. (2021)	Case study	N=2	'Difficulties in navigating the ambiguous boundary between public and private [spaces]' (Hooley et al. 2021: 30) Complexity of legal environment	Dealing with ethical issues in online research
Convery et al. (2018)	Review	Studies included N=22	Time consuming Cumbersome	A review of research ethics in internet-based research
Cilliers and Viljoen (2021)	Original research Content analysis	Studies reviewed N=59	Absence of formal guidance on how to document parental consent online Inability to verify sensitive information such as age and gender	Ethical issues to address when conducting internet-based research
Facca et al. (2020)	Scoping review	Studies reviewed N=10	Difficulty in observing behaviours that may result in a risk of harm to participants or others Private versus public conceptualisations of data generated through social media and gatekeeping	Digital data collection strategies with minors for exploring the ethical issues in research

Studies	Type of scholarly article	Participant and sample	Reported ethical challenges in distance-based research	Focus of the study
Gupta (2017)	Theoretical	N/A	Difficulty in verifying certain information such as age or mental capacity to give consent Difficulty in verifying whether the participant has actually read the details carefully Difficulty in identifying any misconceptions and issues in understanding the study's details before consenting to participate Difficulty in confirming the identity of the person consenting to participation Difficulty ensuring anonymity Difficulty sustaining confidentiality and obtaining informed consent in a virtual setting	Ethical issues in designing internet-based research

Findings

In most of the studies reviewed, ethical issues that were raised, related to three themes. After completion of the thematic analysis from the synthesis of the included studies, three main descriptive themes emerged as ethical challenges in distance-based research. The ethical themes identified are difficulties in obtaining informed consent in virtual settings, difficulties in maintaining confidentiality, and difficulties in anonymity and ensuring anonymity, apart from technical difficulties.

Theme 1: Difficulties in obtaining informed consent

Subtheme 1.1: Inability to verify sensitive information

It is essential to obtain informed consent from all participants in distance-based research. The validity of informed consent rests on three pillars: the type and scope of the information shared with the participant, the participant must understand the information, and the participation must be voluntary and not subject to duress and undue influence.

Findings from most of the studies reviewed indicated that when participants and researchers do not have face-to-face contact, it is more difficult to establish and verify sensitive information such as the individuals' age and competence and their ability to consent freely. Some participants may misrepresent their age or other information to be selected for the study. This ethical challenge seems to decrease the quality of informed consent in distance-based research.

Subtheme 1.2: Difficulties in obtaining supporting consent

Reports from the studies reviewed indicated a lack of formal guidance on obtaining parental consent online. Therefore, obtaining supporting documents in distance-based research where minors are involved is often difficult. Although various on- and offline methods can be leveraged to obtain consent, getting minors' and their parents' consent was seen as more complicated and ethically challenging when requested online instead of during face-to-face interaction. Many of the studies reviewed mentioned the risk of minors fraudulently completing their parents' online consent forms.

Obtaining informed consent in distance-based research remains challenging because of the internet's scope, scalability, and reach. In addition, findings from the studies reviewed indicated no clear best practice for researchers seeking consent from virtual subjects. This challenge leaves researchers with a perplexing and frequently confusing set of ethical issues when collecting data remotely.

Theme 2: Difficulties in maintaining confidentiality

Subtheme 2: Privacy risks

Most studies reviewed indicated that researchers and participants using online platforms to collect data in distance-based research could have a false sense of privacy and security while this might not be the case in face-to-face settings. The studies further indicated that distance-based research data collection raises distinctive challenges. For example, online engagement with video means a participant's domestic space might be visible or audible to a researcher or other group members of a focus group.

Most of the studies noted that establishing privacy when collecting data in distance-based research can be challenging, especially for participants sharing living arrangements with limited private space or time. For example, the circumstances of participants who use public libraries for internet access are not conducive to privacy and dignity. The findings of these studies revealed that the internet environment that enables distance-based research and online data collection might inadvertently compromise confidentiality. For instance, theoretically, a participant's response to interview questions posed by a researcher could be made visible and linked to them using their IP address and tools such as Google.

Third parties are often involved in collecting data in distance-based research. Third parties administering, storing, or analysing research data may heighten the risk of confidentiality and privacy breaches. Most studies reviewed concluded that digital multimedia such as photos, videos captured on smartphones, and digital cameras utilised in remote data collection increase confidentiality concerns.

Theme 3: Difficulties in ensuring anonymity

Anonymity implies that it must not be possible for anyone, including the researcher and the participants, to deduce the identity of any participant from any information related to the research. The reviewed studies' findings indicated that the most commonly mentioned ethical concerns arising in distance-based methods included difficulty in ensuring anonymity. Many of these studies reported that it was challenging to guarantee anonymity in distance-based research because the

direct quotations used to disseminate research findings could point to the original context, resulting in a breach of anonymity. Pseudonyms can hide individuals' identities, but it may be easy to identify individuals using search engines and information technology such as Google, compromising participants' anonymity in distance-based research.

Online venues used to collect data are public domains offering no guarantee of privacy and absolute anonymity, although they may appear private, encouraging the disclosure of personal thoughts. Also, the many elements of the internet environment are inherently public, making it impossible to bar unauthorised individuals from accessing participants' responses, thus effectively violating anonymity.

Furthermore, using common tools and services associated with search engines such as Google risks potential exposure of participants in multiple layers of observation and analysis whenever logging onto the internet. Practical considerations frequently lead to sharing credentials between different services. One of the unforeseen consequences of this practice is that confidential information is often presented in one or more of the layers. It is readily evident that technology provides many ways that individuals can be observed and monitored, posing a challenge to anonymity in distance-based research.

Discussion

The review aimed to analyse existing literature to understand and identify ethical issues related to collecting digitally obtained research data in distance education. The rationale for these objectives was the increased use of the internet and new communication technologies to conduct research remotely, making discussing the ethical issues surrounding distance-based research more important (Cristancho et al. 2018).

This study synthesised the grey areas and ethical challenges in distance-based research in line with this. The findings of this study indicated that the inability to verify sensitive information, privacy risks and difficulties in ensuring absolute anonymity pose challenges to the credibility and trustworthiness of distance-based research.

This review found that there is often no face-to-face contact in distance research, making it almost impossible to confirm users' personal information. The findings revealed that privacy is crucial for studies on sensitive topics. In topics such as gender-based violence, compromised privacy could be very harmful (Peterman et al. 2020).

The findings of this study resonate with Scapa et al.'s (2020) scoping review exploring ethical issues in research using digital data-collection strategies. The findings of their review also indicated a degree of uncertainty regarding maintaining confidentiality, guaranteeing anonymity, and obtaining informed consent when conducting distance-based research. One explanation for this in the literature is the lack of guidance on documenting online consent and confirming the authenticity of the information provided by online participants of distance-based research (Hokke et al. 2018).

Limitations and Strengths

Electronic databases were used in the search for relevant publications regarding ethical challenges and quality matters related to distance-based research. However, articles from other databases that meet the inclusion criteria might not have been included in this analysis due to the nature of the search process. Due to the vast volume of research found on the internet, these small numbers of studies were negligible and would not have had a major impact on the findings of this study. This potential constraint was addressed by conducting a search using Google Scholar, revealing relatively few new sources.

The primary strengths of the study lie in its approach to the literature which involved a thorough search technique and detailed extraction approach.

Conclusion and recommendations

Ethical principles formulated to ensure the quality of research require more stringent attention in remote data collection than in face-to-face situations (Chu et al. 2020). Although remote data collection through digital means can produce ample, robust data, researchers must also ensure that their data collection and analytic procedures are systematic, clearly documented, and comply with ethical considerations. This chapter discussed some specific ethical issues and challenges that distance-based research presents, highlighted by the reviewed data.

Parents or guardians could be contacted directly to verify the information to overcome the challenge posed by false information such as age and gender given by participants to participate in a study and employing age verification software. This study recommends that participants should

be informed timeously of possible sensitive elements of a study and the requirements for a private space, 'code words', or an 'exit button' that they can say or press when their privacy is compromised to minimise risk to privacy (Peterman et al. 2020). Participants should be made aware of the risks and the need for a private space to conduct their remote communications necessitated by the study. However, researchers should expect interruptions such as family members walking in during interviews. Therefore, they should agree on an exit plan and strategies for managing such occurrences in advance, such as terminating the connection, changing the subject, or continuing the research.

Despite a few grey areas, this detailed appraisal of the scholarly literature confirms that ensuring data security and maintaining anonymity, confidentiality, and transparency are essential in online-based research and distance-based education. Violation of these ethical requirements can have severe consequences, especially involving personal and sensitive information.

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