



DATA COLLECTION CHALLENGES IN BEHAVIOURAL RESEARCH WITH SPECIAL REFERENCE TO TEACHER EDUCATION

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RESEARCH ARTICLE



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Abstract

Data collection is fundamental to behavioural research providing the foundation for understanding and interpreting human behaviour. While methodologies differ across disciplines, every research process relies on systematically collected data for analysis and interpretation. In the field of teacher education, research often examines the behaviours, practices and perceptions of teachers, students and other stakeholders, making data collection a critical component. However, researchers frequently encounter ethical, psychological, administrative and practical challenges during the data collection process, particularly in dynamic, real-world scenarios. This study explores the specific data collection challenges encountered in behavioural research with a focus on teacher education. Key issues include difficulties in selecting representative samples, designing appropriate tools, managing communication barriers, addressing gatekeeper-related concerns, ensuring ethical compliance, overcoming funding constraints and maintaining data security. Additionally, the unpredictable nature of real-world scenarios frequently introduces unanticipated obstacles, which can complicate even well-planned research processes. The findings of this study aim to guide early-career researchers in navigating these obstacles by offering strategies to address them. By enhancing understanding and preparedness, this study contributes to improve the precision and generalizability of research outcomes, enriching the broader field of behavioural research.

Keywords: Data collection, challenges, teacher education, behavioural research

1. Introduction

Data collection in behavioural research particularly within the field of teacher education presents a unique set of challenges that require careful consideration and strategic planning. The complexity of studying teacher behaviours, educational practices and institutional dynamics necessitates a deep understanding of the various obstacles that can hinder the process of data gathering (Tripathy, 2013). These challenges encompass logistical issues such as time constraints, participant access and resource limitations as well as ethical concerns related to confidentiality and informed consent (Holden et al., 2015). Additionally, social and cultural factors, technological barriers and institutional policies often influence the way data is collected and the reliability of the information gathered (Shin et al., 2021). Teacher education research is particularly susceptible to these challenges due to the demanding nature of teachers' professional schedules, institutional regulations and the sensitivity surrounding educational practices (Menziwa et al., 2024; Rind, 2020). Moreover, the evolving nature of technology in research methodologies introduces both opportunities and complexities, requiring researchers to adapt to new tools and platforms while ensuring data accuracy and integrity (Indrayadi, 2023). This article explores the key challenges faced during data collection in teacher education research and offers insights into strategies for overcoming these barriers. By addressing these issues, researchers can enhance the validity and reliability of their findings, ultimately contributing to the advancement of teacher education practices and policies (Sadoon et al., 2023; Kadam & Chavan, 2022). Through a combination of thoughtful design, ethical rigor and adaptive strategies, it is possible to navigate the challenges of data collection and produce meaningful, impactful research in the field of teacher education (Mazhar et al., 2022).

2. Objectives

1. To identify and analyse the key logistical challenges that hinder data collection in behavioural research.
2. To explore the influence of cultural, social and institutional factors on the data collection process in behavioural research.
3. To investigate ethical challenges in behavioural research on teacher education.

4. To evaluate the impact of technological and methodological challenges during data collection in behavioural research.
5. To formulate actionable strategies and recommendations that enable researchers to overcome data collection challenges in behavioural research.

3. Methodology of the Study

3.1. Research Design: The study adopted a qualitative research design to explore the multifaceted challenges encountered during data collection in behavioural research with a focus on teacher education. This approach allowed for an in-depth understanding of the logistical, cultural, ethical and methodological issues faced by researchers. The study relied on semi-structured interviews and document analysis to gather comprehensive data on the subject.

3.2. Study Setting: The research was conducted across multiple educational institutions, including teacher training colleges and universities, located in urban, semi-urban and rural areas. These diverse settings ensured a wide range of experiences and perspectives reflect the complexity of data collection in varying contexts.

3.3. Participants: The study involved 30 participants, including 15 Ph.D. researchers with experience in conducting behavioural studies in teacher education, 10 academic researchers who had participated in research studies and 5 M.Phil. fellows who had conducted teacher education research. Participants were purposively selected to ensure a diverse representation of experiences and insights related to the challenges of data collection.

3.4. Data Collection Methods

- **Semi-Structured Interviews:** Individual interviews were conducted with researchers to gain detailed insights into the logistical, cultural and ethical challenges they faced during data collection. Questions focused on specific barriers encountered, strategies employed to overcome them and recommendations for improving data collection processes (Knott et al., 2022).
- **Document Analysis:** Institutional documents such as research guidelines, ethics policies and participant consent forms were reviewed to identify institutional practices and policies impacting data collection (Shaffer et al., 2018; Johnson, & Christensen, 2008).

3.5. Procedure of Data Analysis: The collected data were analysed using thematic analysis following a series of structured steps. Initially, familiarization involved repeatedly reading the transcriptions of interviews and focus group discussions to identify recurring themes. Subsequently, systematic coding was conducted to highlight key challenges, strategies and recommendations related to data collection. The codes were then grouped into broader themes, including logistical barriers, cultural sensitivities, ethical dilemmas and methodological considerations. Finally, the identified themes were interpreted within the context of behavioural research in teacher education, providing actionable insights to address data collection challenges. This methodological approach allowed the study to thoroughly explore the complexities of data collection in behavioural research within teacher education and to offer practical strategies for overcoming these obstacles.

4. Analysis of the Objectives

4.1 To identify and analyse the key logistical challenges that hinder data collection in behavioural research.

Logistical challenges are an integral aspect of data collection in teacher education research, often impacting the efficiency and progress of research projects. The following are key logistical challenges commonly faced by researchers:

- **Time Constraints:** Teachers and teacher educators have demanding schedules due to their teaching, administrative, and professional responsibilities, making it challenging to coordinate data collection activities such as interviews, focus groups, and surveys. Scheduling conflicts arise as they juggle classroom teaching, grading, meetings and extracurricular duties, often requiring multiple follow-ups and rescheduling (Sadoon et al., 2023; Kadam & Chavan, 2022). Limited availability during exam seasons, school holidays and breaks further complicates data collection. Even when available, their heavy workloads may leave them feeling overwhelmed, reducing their willingness or capacity to participate in research (Heft et al., 2024).
- **Funding Limitations:** Financial constraints can hinder data collection in teacher education research, as funding is crucial for travel, equipment, participant incentives, and technology. Interviewees emphasized that compensation or incentives can boost participation, but limited funding may restrict these offerings, reducing response rates (Mazhar et al., 2022). Additionally, technology plays a vital role in modern research, including online surveys, video conferencing and data analysis, yet budget limitations can restrict access to essential digital tools, software licenses and specialized equipment (Pyhalt et al., 2012).
- **Travel Barriers:** In teacher education research, travel poses a significant logistical challenge, especially in large countries or areas with dispersed institutions. Collecting data from remote or rural locations can be time-consuming, costly and sometimes impractical. Travel expenses, including transportation, fuel and accommodation can be substantial, particularly for face-to-face interactions in distant regions (Hobbs & Porsch, 2021; Bakhshi, 2019). Poor transportation infrastructure, limited public transit and inadequate road conditions may further complicate access, causing delays. Additionally, time constraints can extend the data collection timeline as researchers may need several days to visit multiple institutions.
- **Institutional Permissions:** Securing approval from educational institutions is essential but often time-consuming, requiring researchers to navigate bureaucratic procedures such as applications, permissions and ethics reviews, leading to delays (Sadoon et al., 2023; Whang & Lee, 2020). Strict institutional policies may demand extensive documentation, background

checks or compliance with specific guidelines, further complicating the process. Approval delays are exacerbated by administrative workloads and complex decision-making, particularly for studies on sensitive topics or potential risks (Sadoon et al., 2023).

4.2. To explore the influence of cultural, social and institutional factors on the data collection process in behavioural research

Understanding the influence of cultural, social, and institutional factors is crucial in the data collection process of behavioural research. These factors can shape participants' responses, impact communication and introduce biases that affect research validity.

- **Cultural Sensitivities:** Cultural and hierarchical norms often hinder open communication in educational and institutional settings. In environments where authority is highly respected, junior teachers may hesitate to share honest opinions, especially if their views conflict with senior colleagues or leaders (Johnson & Clarke, 2003). This deference can lead to conformist responses, limiting research depth. Additionally, cultural norms that discourage criticism or challenges to established practices further restrict candid insights particularly on sensitive topics (Aluko et al., 2023).
- **Language Barriers:** Language differences, dialect variations and professional terminology pose challenges in multilingual research. Research tools must be translated or simplified for clarity and inclusivity as inaccurate translations or technical jargon can cause confusion and misinterpretation (Taherdoost, 2021). Cultural nuances further influence how questions are understood and answered as certain words or phrases may lack direct equivalents across languages. Careful adaptation is essential to preserve research integrity and ensure accurate data collection (Gajapathy, 2022).
- **Social Expectations:** Social expectations can lead participants to provide socially desirable responses rather than genuine opinions, especially on sensitive topics like teaching practices, institutional policies or personal attitudes (Heinrich & Klein, 2021). This bias encourages participants to present themselves or their institutions positively, avoiding criticism or judgment. As a result, data may become skewed limiting the researcher's ability to draw accurate and valid conclusions about the educational environment.
- **Gender Dynamics:** Gender roles and biases can shape participant engagement in research, especially in culturally traditional settings. Female teachers may face restrictions on participation, particularly with male researchers while male participants might dominate discussions, limiting female voices. Additionally, societal norms influence topic sensitivity, affecting participants' comfort levels. To ensure balanced participation, researchers must adopt inclusive and culturally sensitive approaches (Kathuria, 2021).

4.3. To investigate ethical challenges in behavioural research on teacher education.

Ethical challenges in teacher education research include informed consent, confidentiality, power imbalances, sensitive topics and researcher bias. Clear communication ensures consent while confidentiality safeguards participants. Managing power dynamics and fostering a supportive environment encourage honest feedback. Mitigating bias requires neutral tools, pretesting and systematic analysis for research integrity.

- **Obtaining Informed Consent:** Ensuring participants provide informed consent is a critical ethical requirement in research particularly when involving vulnerable groups like novice teachers or students. Researchers must clearly communicate the study's purpose, methods, benefits and risks in an accessible manner, ensuring participants understand their voluntary participation and right to withdraw without consequences (Aluko et al., 2023). Vulnerable groups may need additional support, such as simplified language, examples or opportunities for questions. Challenges arise if participants feel pressured due to institutional authority or lack of understanding (Haahr et al., 2014). Ensuring transparency and allowing sufficient time for informed decision-making is crucial.
- **Maintaining Confidentiality:** Confidentiality is crucial for protecting participants' identities and ensuring their responses remain private, particularly when handling sensitive topics like teaching practices or institutional policies. Breaches can cause professional or social consequences, discouraging honest feedback (Dickson et al., 2007). To prevent this, researchers must anonymize responses, securely store data and restrict access to authorized personnel. Clear assurances should be provided that participants' information will not be linked to their identities in reports or publications.
- **Power Imbalances:** Power dynamics can impact participants' willingness to engage and the authenticity of their responses. When researchers hold authoritative roles, participants may feel pressured to comply, leading to biased or overly favourable answers (Nwokike et al., 2023; Claudius, 2016). This compromises research integrity. To mitigate power imbalances, researchers should emphasize on voluntary participation to ensure responses that do not affect professional relationships and use neutral facilitators or anonymous data collection methods (Bebell et al., 2010).
- **Sensitive Topics:** Research involving delicate subjects such as critiques of teaching practices, institutional policies or personal experiences, requires careful handling to ensure participants feel comfortable and secure. Participants may hesitate to provide honest feedback if they fear of judgment, criticism or professional consequences (Xu, 2008). Researchers must create a supportive environment by ensuring confidentiality, framing questions in a non-threatening manner and emphasizing that there are no right or wrong answers. Offering participants, the option to skip questions they find uncomfortable and providing debriefing opportunities can also help reduce discomfort and foster trust (Mwita, 2022).
- **Bias and Neutrality:** Researcher bias threatens the validity of data collection and analysis, influencing question framing, participant interactions and response interpretation (Easton et al., 2000). Leading questions or preconceived notions may shape participants' answers. To reduce bias, researchers should develop neutral, open-ended tools, pre-test them with diverse groups and receive training in impartial data collection. Systematic analysis and consideration of alternative

interpretations are crucial to ensuring findings reflect participants' perspectives rather than researchers' assumptions (Qasim et al., 2021).

4.4. To evaluate the impact of technological and methodological challenges during data collection in behavioural research.

Technology enhances data collection in teacher education research by improving efficiency and accessibility but it also presents challenges. Overcoming these obstacles is essential for ensuring research success. Below is a detailed discussion of common challenges researchers may encounter.

- **Technical Difficulties:** Technical issues, such as poor internet connectivity, software malfunctions and glitches can disrupt research, especially in online settings. Unstable connections may cause delays, dropped calls or survey interruptions, affecting data reliability (Benfield & Szlemko, 2006). Bugs, server downtime and user errors in research tools create further obstacles while researchers may struggle with troubleshooting (Potnis, 2015).
- **Digital Literacy:** One of the significant challenges which researchers face, especially when dealing with older teachers or those in rural or underserved areas, is the varying levels of digital literacy among participants. Some may not be familiar with the tools required for online surveys video interviews or collaborative platforms, reducing their ability to engage with the research process effectively. Even if participants have basic computer skills, they may still need additional time or guidance to understand how to navigate digital tools, leading to delays or misunderstandings about how to participate in the study (Al-Salom & Miller, 2017).
- **Access to Technology:** Limited access to reliable technology hinders digital data collection, especially for teachers in remote or economically disadvantaged areas who may lack stable internet or essential devices. Some participants do not own a computer, tablet or smartphone, making survey completion or virtual interviews difficult (Potnis, 2015). Additionally, rural educators often struggle with unstable internet and even when teachers have devices inadequate school infrastructure further complicates online data collection.
- **Data Security:** Technology-based data collection raises critical concerns about data security and privacy, requiring researchers to protect participants' sensitive information from unauthorized access. Participants may hesitate to share personal data due to uncertainty about storage and usage (Bronkhorst et al., 2011). Compliance with data protection laws necessitates encryption, consent procedures and secure storage. Moreover, the risk of data breaches remains a major concern when using online platforms or cloud storage (Menziwa et al., 2024).
- **Participant Engagement:** Virtual engagement is challenging due to the lack of face-to-face interaction, which can reduce focus and participation. Without the structure of in-person settings distractions are more likely during virtual interviews, surveys, or focus groups (Yousefi et al., 2015). The absence of physical presence may weaken researcher-participant rapport, affecting engagement and response honesty. Additionally, technology fatigue from excessive digital tool use can further decrease participation in online data collection (Carolyn & Elizabeth, 2012).

4.5. To formulate practical strategies and recommendations that enable researchers to overcome data collection challenges in behavioural research.

Developing practical strategies is essential for overcoming data collection challenges in behavioral research. Addressing issues such as cultural barriers, language differences and social biases can enhance data accuracy and reliability. This study aims to provide effective recommendations to ensure a more inclusive and efficient research process.

- **Advance Planning and Contingency Preparation:** Starting the data collection process early with a realistic timeline accommodates potential delays, such as scheduling conflicts or permission approvals. Planning ahead ensures smooth execution and allows time to adapt to unforeseen challenges. Developing contingency plans including alternative recruitment methods or data collection formats further enhances readiness and efficiency (Ekpoh, 2016).
- **Building Relationships and Establishing Trust:** Establishing trust and rapport with institutions, stakeholders, and participants is essential. Clear communication about research goals and potential benefits facilitates access to participants, approvals, and cooperation. Creating a respectful and supportive environment encourages honest participation and builds stronger relationships (Holden et al., 2015; Gill et al., 2008).
- **Flexible and Technology-Driven Data Collection:** Offering flexible data collection options, such as in-person and online methods, addresses logistical barriers like time constraints and geographical limitations. Using digital tools for surveys, interviews and focus groups reduces travel requirements and broadens accessibility (Bebell et al., 2004). Providing clear instructions and technical support ensures seamless engagement with technology.
- **Ethical Transparency and Confidentiality:** Clear communication about participants' rights, the research process and data usage fosters trust and cooperation. Robust measures to ensure confidentiality and anonymity encourage honest responses while protecting participant privacy. Ethical safeguards, including strict protocols for data handling, maintain the integrity of the research process (Tripathy, 2013; Carolyn & Elizabeth, 2012).
- **Cultural Sensitivity and Accessibility:** Research tools should be linguistically and culturally appropriate and easy to understand to ensure inclusivity. Collaborating with local experts and considering cultural norms enhance the study's relevance and respectfulness (Menziwa et al., 2024).
- **Methodological Rigor and Validation:** Using validated, neutral and reliable tools minimizes biases and ensures data credibility. Pilot studies help test and refine tools, identify potential problems and enhance data quality through pretesting and follow-up validation (Gill et al., 2008).

- **Reflexivity and Continuous Improvement:** Researchers should continuously reflect on their roles and biases to ensure ethical integrity and responsible research practices (Rimando et al., 2015). Keeping detailed records of the data collection process challenges and solutions provides valuable insights and informs the development of best practices for future studies.

5. Conclusion

Data collection in teacher education research presents numerous logistical, ethical and practical challenges that can significantly impact the success of a study. These include time constraints due to participants' demanding schedules, barriers to accessing remote locations and delays in obtaining institutional permissions. Cultural and social factors, like hierarchy, language barriers and gender dynamics make it harder for participants to engage and provide accurate responses. Ethical challenges such as keeping information confidential, getting consent and addressing power imbalances need careful attention to build trust. Problems with data accuracy like social desirability bias, recall bias and inconsistent answers can affect the results. Technological issues, like poor access to devices or internet and institutional regulations like long approval processes and strict guidelines add more difficulty. To overcome these challenges, researchers must use flexible strategies, the right tools to follow ethical practices and build strong relationships with participants and institutions. This helps improve data quality, streamline the process and lead to valuable results in teacher education research.

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