

Addressing the messiness of data analysis: Praxis, readiness and tips from doctoral research

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Abstract

Despite the fluid and nonlinear nature of data analysis, specifically in qualitative research, published work in comparative education has rarely discussed the messy aspects of data analysis. This Forum addresses the complexity of the analysis stage faced by three doctoral researchers in terms of: considering data analysis when selecting data collection tools; messiness of data analysis deriving from fieldwork and data collection; integrating different data sources; practising reflexivity during data analysis; and ethical issues arising from data analysis. The Forum aims not only to offer suggestions and tips to deal with data analysis but also to encourage more open discussions on this topic within the research community.

Keywords: data analysis, messiness, doctoral research, reflexivity

Introduction

Nozomi Sakata and Carly Christensen

Research has a fluid nature, especially in qualitative forms. Unlike quantitative research, which usually sets out a systematic analytical plan at the proposal stage, qualitative research generally entails, or even encourages (Bartlett and Vavrus 2017), flexible adjustment of research processes. Bathmaker (2010, 200) points out that it is the data analysis section in a qualitative research proposal, which ‘start[s] to become vague and short on detail’. Published guidance on data analysis does exist as part of the overall research process (e.g. Bryman 2016; Robson 2002; Cohen, Manion and Morrison 2013) as well as in a form which is specifically dedicated to data analysis (e.g. Silverman 2011; Feldman 1995; Bliss, Monk and Ogborn 1983). However, these methodological textbooks and published articles often describe research processes as technical and straightforward, which may disguise the messiness – or the changing nature – of the research processes (Billo and Hiemstra 2013).

Several authors have recently addressed research messiness during data collection (Billo and Hiemstra 2013; Ballamingie and Johnson 2011; Naveed et al. 2017) but the complexity and fluidity of data analysis remain largely unexplored in the literature (Bathmaker 2010; Mauthner and Doucet 2003). This Forum was inspired by the dilemmas and frustrations experienced by doctoral researchers in UK institutions, highlighted at the British Association for International and Comparative Education Society (BAICE) Student Conference 2017. The Forum spotlights doctoral studies due to the unique nature of doctoral students' research. Earning a PhD in most cases represents a gateway for novice researchers to carry out individual, relatively long-term academic research (Billo and Hiemstra 2013, 314). The BAICE Student Conference exposed the lack of published literature discussing data analysis. To address this gap, this Forum piece aims to prompt discussions regarding the complexity of data analysis by sharing experiences and offering practical suggestions to deal with data analysis issues.

The Forum explores topics surrounding the messiness of data analysis in relation to: considering data analysis when selecting data collection tools; messiness of data analysis deriving from fieldwork and data collection; integrating different data sources; practising reflexivity during data analysis; and ethical issues arising from data analysis. Each of these aspects of data analysis will be considered briefly below. Three doctoral researchers will then reflect on and discuss their messy analysis in detail.

Commonly, the data analysis process is left unconsidered during the planning of data collection methods, perhaps partly because some decisions can only be made after data is collected; but pondering the details of an analytical approach at this phase could help to increase the rigour of the research. Spencer et al. (2014, 275) point out that data analysis is an ongoing and inherent part of the whole research process and should 'infuse all aspects.' In reality, however, most research proposals tend to focus on the literature review to explore

research gaps and outline methodology/methods that address the literature gaps. These features of proposal writing often cause researchers to consider in hindsight how the selected data collection tools may assist data analysis (Patton 2002). Cohen, Manion and Morrison (2013) encourage researchers to deliberate concerning how each method relates to data analysis by thinking about ‘what needs to be done with the data’ (130). Denscombe (2011) further suggests corresponding the types of data to be generated by each tool with a specific research question to support meaningful data analysis. As Wang elaborates in this Forum, considering data analysis in an early stage will influence fieldwork and greatly facilitate the subsequent data analysis. Implementing data collection tools in a manner that aids the analysis process facilitates research enquiry to drive the methods, instead of the methods driving the enquiry (Colley 2010, 183).

The researchers addressing the messiness of fieldwork often highlight a fluctuating nature of the original research plans (Billo and Hiemstra 2013; Ballamingie and Johnson 2011; Naveed et al. 2017). For instance, logistical and practical problems may prevent researchers from accessing certain populations. Existing political and social relations in the field may also yield non-participation or dropout of informants (Ballamingie and Johnson 2011). Unexpected encounters within the field site challenge researchers by requiring research methods to be altered. However, these changes to methods affect not only research design but also theoretical prepositions, epistemological stances (Billo and Hiemstra 2013), and data analysis procedures. After all, it is the data collected in the field that allows the researchers to analyse and generate certain knowledge (Hyndman 2001). Hence, the lack of predictability involved in fieldwork directly impacts data analysis.

Usually doctoral research employs various methods and involves multiple respondents. This integration of different types of data into a cohesive account occurs largely during the analysis stage (Bartlett and Vavrus 2017). Problematically, the detailed process of

data synthesis is usually neither explained in published journal articles nor included in graduate research training (Bathmaker 2010). In attempting to address the messiness of incorporating data during analysis, Patton (2002) suggests that researchers design an appropriate data management system in advance. Also, Merriam and Tisdell (2009) advise having an inventory of the collected data to enable a coherent analysis process. Later in the Forum, Wang shares additional practical tips concerning organising and managing large volumes of data derived from her analysis experience.

For doctoral students, synthesising accounts from various respondents can be challenging. Analysis involves making choices concerning the significance and sequence of different narratives. Feldman (1995) cautions that researchers need to mitigate for prioritising certain respondents or types of data during analysis. Reflexive choices are constantly made by researchers during data analysis regarding questions concerning how to include different types of data and voices. Presented later in this Forum, Ware reflects on her constant decisions with respect to ‘what counts as data for analysis.’ Christensen also reports her frustration regarding unconsciously prioritising data from certain groups over others.

The importance of reflexivity in social science research is widely recognised. Reflexivity is particularly important during fieldwork which usually occurs within the presence of research participants. Given that the process of data analysis is filtered through one’s theoretical stance, worldviews and biases (Merriam and Tisdell 2009), the need for reflexivity carries into the analysis phase. However, within the research community, reflexivity during this stage is rarely discussed (Mauthner and Doucet 2003). It is usually the researchers who choose what constitutes data, interpret it, create narratives, and isolate what is considered important (Gordon 2005). Doctoral researchers often work individually when analysing data, which may cause the practising of reflexivity to be difficult due to physical and emotional detachment from the field site. In the absence of the participants, and hence

without negotiating the research relationship face-to-face, the researchers can easily have more power over the data. Correspondingly, writing-up research involves making political decisions (Aaltio and Hopfl 2009). As Usher and Edwards (1994) claim, reflexivity helps researchers interrogate possible power imbalances between the researcher and the participants as well as the knowledge generated in the process of data analysis.

Reflexivity is symbiotically linked to the ethics entailed in data analysis. The potential of data analysis being underpinned by hegemony is significant for researchers especially those who are affiliated with institutions in the Global North. Eurocentric dominance in academia can cause the process of data analysis to overlook differing understandings of reality, presumably reproducing oppressive systems of power (Battiste 2013), which Christensen illustrates in detail. This requires researchers, especially those who rely on theory-driven data analysis, to be cautious of representational issues and to question whether the theory being utilised is culturally appropriate (Smith 1999). Many researchers have proposed approaches to assist in mitigating hegemonic power imbalances, including member checking, identifying divergent views, detecting convergent views and triangulation (e.g. Bryman 2016; Patton 2015; Robson 2002). Yet, in exercising these approaches, Robinson-Pant (2005) reminds us to include localised ethical practices.

What follows is three individual contributions delving into these aforementioned aspects of data analysis. Ware discloses the struggles she faced during transcribing data gathered from young people identified as having special educational needs and disability (SEND). Her research involved using a type of member checking that generated additional data but also became a meaningful process that facilitated robust data analysis. Wang reflects on her research experience that may resonate with other novice researchers, such as feelings of ambitiousness, physical exhaustion and postponement of data analysis. The author explains the implications and offers concrete suggestions to consider in advance of fieldwork

and data analysis. Lastly, Christensen reveals that data analysis can recreate colonial oppression. She reflects upon data analysis procedures leading to the favouring of data derived from an ‘adult settler’ over the data generated by the Indigenous youth and community leaders. She offers examples of reflexive practice during data analysis. Through the Forum, we hope to encourage the research community to share more reflexive accounts of data analysis. This will enhance understanding and knowledge on the messiness and fluidity pertaining to data analysis by facilitating constructive and critical dialogues on the issue.

Working with data from children identified as having special educational needs and disabilities (SEND): Reflections on transcribing and member checking

Hannah Ware

The purpose of my doctoral research is to bring the experiences of children identified as having SEND, learning in special and mainstream schools in England, to the fore. This contribution addresses some of the considerations that emerged during analysis. Here, I focus on possible resolutions paying attention to the specific needs of the participants. I begin by giving an outline of the project and briefly articulating the innovative and inclusive research methods used within my doctorate. Next, I focus on the decisions made as to what counts as data for analysis within the project. Following on from this I focus on some of the quandaries faced in relation to transcribing and member checking.

Overview of research project

I undertook inclusive, ‘story-telling and picture drawing’ multi case studies (Bassey 1999, 62) in order to understand and describe, in rich detail, the multiplicity of experience as told by young people identified as having SEND (Burr 2015; Gergen and Gergen 1988). The research took place in government maintained special, mainstream and mainstream catholic faith schools in England. It involved six young people identified as having SEND (moderate

to severe) who had an Education Health Care Plan and were aged between 12 and 19 years old.

Research methods

My research sought to create a methodology enabling participants to express themselves, as far as possible, on their own terms. The participants were valued as active collaborators, aiming to make the ‘researcher’/ ‘researched’ relationship more dynamic. I adapted existing research tools including photovoice, relational mapping and self-portraits in order to make the data meaningful for the participants. It was important that the methods had autobiographical elements, as this enabled the young people to collect detailed data on their own lives (Bagnoli 2004). Life is generally experienced through multiple senses; hence, the data collection instruments were designed with the inclusionary idea in mind that ‘not all knowledge is reducible to language’ (Bagnoli 2009, 547). The data collection process followed an iterative process where the raw data was used to inform and stimulate conversations between the participant and myself. In collecting multi-sensory data, provisions had to be made in the analysis process to carry out effective analysis – this meant that whilst coding cross-checking transcripts with the multi-sensory video footage was necessary. This was particularly important for the participants who were less verbal as this data contains non-verbal communication.

What counts as data for analysis?

After being in each school for six months I was well known to the young people and SEND departments, making it critical for me to be clear about what would count as data for analysis. Becoming embedded in the schools meant that I was party to many ‘critical incidents’, such as conversations in the staffroom or incidents involving challenging behaviour in the classroom. The inclusion of such critical moments for analysis required ethical consideration (Delamont 2002). Debriefing with the individuals involved in these incidents became critical

in order to retain a robust ethical approach and ensure that consent was given to include these moments within my data. This means that I did not undertake analysis of any material that the young people had not reflected upon with me. A key reason for this was to ensure that neuro-typical understandings of these critical moments were not imposed onto the young persons' un-contextualised data (Milton and Sims 2016).

For my analysis, the core data was made up of the transcripts produced from the recordings of the instruments along with the member checking texts which, through the process of checking, generated more data. A sizeable amount of videos, pictures and creative writing (such as poems and stories) were produced. Whilst ethical questions problematise the production of excess data, this data was critical to produce in order to stimulate conversations between myself and the young people and to engage in ethical data analysis.

Transcribing and member checking: Generating new data

Transcribing is a key bridge between data collection and analysis. It is one of the first ways the researcher begins to embed themselves in the data. In my research project member checking was central to the analysis as it involved me re-storying the young people's data in order to make the transcripts accessible for the young people to check. This involved drawing out key themes within the data which would act as a structure to develop the accessible member checking texts. Due to the paucity of research directly exploring experiences of young people identified as having SEND and a lack of guidance on authentic member checking in this area, I drew on narrative inquiry and specifically Clandinin and Connelly (2000) to develop an 'interim text' (p.39) as a basis for member checking. An interim text can be seen as the link between the data obtained in the field, and the final research text. In analysis, I was led by Josselson (2011) who reminds researchers that 'we are not speaking for our participants, rather we are speaking about the texts we have obtained from them' (p.39); I decided to focus analysis on both transcripts and member checked texts to ensure I retained

authenticity of co-generated data between the participants and myself.

In exploring extant research concerning the lived experience of those identified as having SEND, there is a lack of attention to the ethics of transcribing (when both the researcher and the participants are communicating in the same language). Most studies state that transcripts were either transcribed verbatim or fully transcribed (cf. Baines 2012; Dowse 2009; Lingam et al. 2014; Shah 2005). Hole (2007), who undertook narrative research with Deaf women, discusses some of the ethical issues with transcription and authenticity such as misinterpretation and identity-eradication. Similarly, within my own research I faced decisions about how I would transcribe the diverse and sometimes non-typical narratives communicated by the young people. Transcribing verbatim presented me with ethical considerations in regard to the preservation of dignity. This was because a person may not wish to have stutters, repetitive hesitations, extraneous words and sounds, or they may not wish non-typical communication used when quoted within the research. Conversely, altering or paraphrasing transcripts to reflect typical patterns of spoken English posed a risk of removing or obscuring identity. As such, I decided that the unique speech-identities of the young people were integral reflections of their own selves, and hence I used verbatim transcription.

Once transcription was finished, member checking that examined the issue of speech pattern representation became an integral part of the data analysis process. It was important to find an accessible way to member check because sending the young people written transcripts would have been exclusionary, particularly given many of the young people found reading difficult. The literature provided guidance regarding how to re-story transcripts into cohesive narratives to help make sense of them. I created accessible texts drawing on the idea of an 'interim text' within narrative inquiry (Clandinin and Connelly 2000, 133). On a case by case basis, I explored with the young people how they wanted their speech patterns to be

represented. This manner of member checking offered transparency within the research and the opportunity for the young people to edit the data and self-censor, as they wished.

In order to produce a trustworthy text for the young people to member check, I utilised the steps for 'core-story creation' outlined by Emden (1998, 35) which suggests the removal of words that detract from the key ideas of the story. For reasons articulated above in relation to transcribing, removing erroneous words was something I did not want to undertake as the speech patterns were all unique to the individuals and part of who they were. Hence, I adapted the core-story creation process to fit my research context and undertook the following steps to produce accessible texts for the member checking (steps 1 -5 adapted from Emden, 1998).

- (1) Reading transcripts multiple times to grasp contexts and identify overarching themes.
- (2) Deleting all interviewer talk.
- (3) Reading for sense.
- (4) Identifying data on similar themes (e.g. in school, family, friends) and grouping data together.
- (5) Repeating steps 1-4 to ensure coherence.
- (6) Making accessible through large font and symbol supported text (see example in Figure 1).

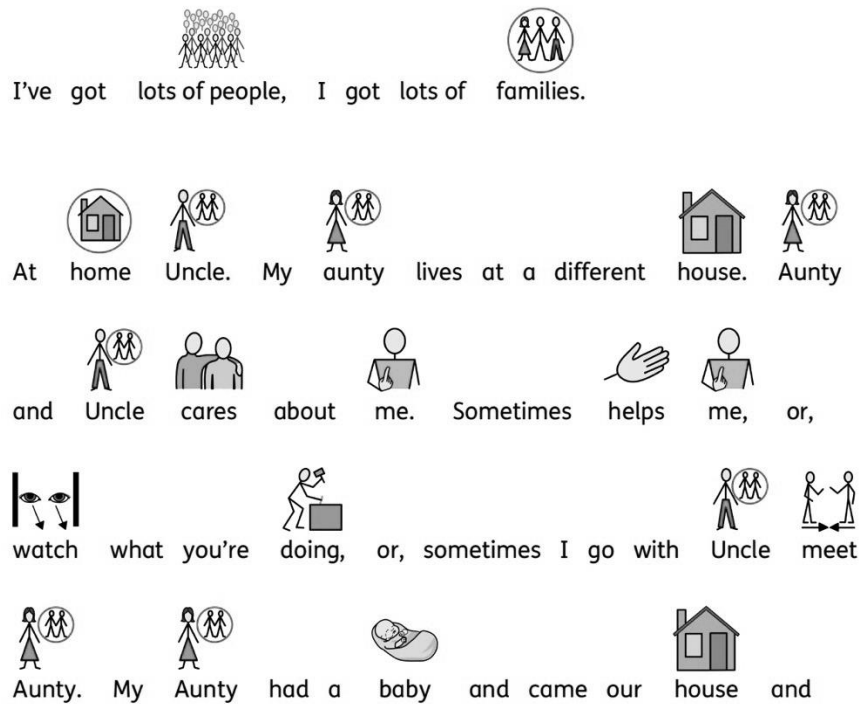


Figure 1. *Accessible member checking text*

Some member checking was done within a few hours, for others the process took three or four sessions over the duration of a few weeks. For every young person, the process of member checking generated new data.

The young people were active participants which helped them to feel ownership over the accessible texts. This could indicate that rather than being a box checking exercise, it was an opportunity to authentically mediate their own voices within the research. Presenting the accessible texts to the participants also meant that they were involved in the early stages of data analysis. This process enabled the young people to authentically mediate their own voices during the entire process of analysis. However, this process generated two sets of data including the original transcripts and the accessible texts that underwent the member checking. In order to be faithful to the temporality of the data and the changes that happened over time, I decided to analyse both sets of data. I applied the same coding schedule to both

data sets which facilitated comparing how the young people's mediation of their voices changed the way I coded the data. Furthermore, it also provided an opportunity to explore the temporality of experience. This process of dual analysis was valuable given that much of the literature on students identified as SEND often situates the young people as lacking agency (Baines 2012). By analysing both sets of data, I was able to clearly track the agency of the participants.

Conclusion

Learning disabled people have often been excluded by the traditional mechanisms of academic discourse, and are especially underrepresented on their own terms (Barton 1998; Pisani and Grech 2015). Oliver (2002), a pioneer of the social model of disability, stated that epistemologically, research must reject the notion that it is investigating the world and rather replace it with an understanding that 'research produces the world' (14). This understanding is particularly important if we are to continue on an inclusive trajectory in line with the Sustainable Development Goals (UN, 2015). The voices of participants must be present in every facet of the research process, not only in the data collection phase. Meaningful member checking and participatory pseudonym creation are substantial examples of the ways in which participation can be extended to ensure the young people have control over their own representation throughout the research process.

Challenges in analysing qualitative data resulting from insufficient consideration of data analysis before and during data collection

Sihui Wang

Introduction

Despite numerous books on qualitative research methods and analyses, the process of transforming large volumes and various types of data remains challenging for most novice

researchers. For instance, Silverman (2011, 57) describes metaphorically that ‘Beginning qualitative data analysis can seem like exploring a new territory without an easy-to-read map’. Many methodological discussions (Bryman 2016; Johnson and Christensen 2012; Taylor, Bogdan and DeVault 2015) present a neat and linear process from designing research, through gathering and analysing data, to arriving at findings. Although these discussions emphasise that the reality of research is not as straightforward as they present it to be, this is usually all they do to prepare the reader for the chaos that commonly awaits. I, as one such reader, was unprepared for the messiness of my dataset resulting from insufficient consideration of data analysis before and during data collection. From my conversations with other PhD students at the BAICE student conference 2017 concerning data analysis, I realised that experiences of chaos during data analysis was shared with the other PhD participants.

This short Forum contribution, with an account of my current research trajectory, presents the ongoing and iterative nature of qualitative data analysis deriving from the ethnographic fieldwork and reflects on data collection procedures that could have facilitated the data analytical process. Being in the initial stage of data analysis at the time of writing this article, I am not exploring the analysis process per se; rather, I focus on the preparation for data analysis at the data collection stage and the problems that I might have created for analysis. Three corresponding solutions and strategies will also be discussed, including being realistic about the amount of data to collect, collecting and organising data in an analysis-friendly way, as well as starting analysing data at an early stage in the research process. My contribution aims to draw out potential implications for new researchers who might experience similar issues.

Overview of the study and the current messiness

The data collection process I reflect on emanated from my exploratory PhD study investigating how postgraduate taught international students negotiate their identities and verbal participation in intercultural classrooms at a UK university during the academic year 2016 to 2017. The internationalisation of higher education and growth of international student mobility make higher education classrooms culturally and linguistically more diverse than ever and recent research reports that international students usually find it challenging to participate verbally in this new learning environment (Yu and Moskal, 2018). To provide insights into students' classroom experience focusing on oral engagement, this study applied an ethnographic methodology that involved ten postgraduate students from seven different countries as well as twelve of their instructors and twelve of their peers. I observed the ten focal participants' classroom behaviours for one semester, recorded through classroom observation protocols. Short interviews immediately after the class were designed to capture their feelings and reactions to the class. I also conducted three additional rounds of semi-structured interviews with each student, each of which lasted around one hour. These interviews occurred at the beginning, in the middle and at the end of their Master's programmes. At the end of the first semester, I interviewed twelve instructors and twelve of the focal students' peers in an attempt to present a holistic picture of the participating students' classroom experiences by triangulating multiple perspectives. All interviews were audio-recorded. In addition, the student participants were encouraged to keep reflective journals to record significant events and feelings. Following the students into different classrooms, observing and interviewing their reactions and responses to the classroom practices, I was able to document their changing behaviours and perspectives at different stages throughout their academic study.

This research generated voluminous data from multiple sources, including eighty hours of interviews, seventy-eight sets of field notes and sixty reflective journals. It was

challenging to organise and manage the data. Reflecting upon the magnitude of the messiness, one hour recorded interview took an average of eight hours to transcribe, which reveals the laborious process of preparing the data for analysis. Facing the big volume and multiple sources of data, I did not know where I should start or what I should do with the data. I was unprepared for the messiness of my data resulting from insufficient planning for how to organise or manage data. I also did not consider data analysis before and during my data collection. In the following sections, I reflect on the process I employed starting with deconstructing the messiness of data analysis in relation to the volume of data, the way of data collection, and the timing of data analysis.

Be realistic about the volume of data to collect

It is a common phenomenon for beginner researchers to be unrealistic and overly ambitious about the amount of data to collect, which demands a great investment of time in the subsequent analysis (Wellington 2015). I was ambitious to include as many participants as possible to make generalisations about international students' classroom experiences overseas. Through the snowball sampling strategy, I recruited twelve student participants. I was even prepared to accept more participants should more students be interested. However, I realised it was not practical to include more as I carried out the research. On average, I observed three classes (six hours) per day. This means I spent about seven hours in fieldwork each day. After the whole day, I was exhausted, with hardly enough energy to manage the data collected or to engage reflexively. As mentioned by Berger (2015), reflexivity has a significant impact on the quality of research, but the tiredness I experienced did not allow me to pursue the reflexivity adequately. In hindsight, it would be more realistic to work with a smaller number of cases, which would have enabled me to explore the depth and richness of the data and consequently enhance the reflexivity practice (Bryman 2016).

In addition, the exploratory nature of the current research makes it impossible to make generalisations, especially based on a small number of samples. The relatability of a case study is more significant than its generalisability (Johnson and Christensen 2012). Therefore, it makes more sense to promote the relatability of my research through reflexivity and in-depth analysis of participants' adaptations and transformations over time, rather than concerning myself with generalisability of my findings. New researchers tend to 'over-collect' data for fear that they might end up with insufficient data. They nonetheless might end up with 'under-analysing' the data due to the limitations of time and energy. Being realistic about the volume of data to collect will make the subsequent data analysis more focused and time-efficient (Wellington 2015).

Collect and organise data in an analysis-friendly way

Data analysis can be facilitated and enriched by using data collection tools in a way that can assist analysis (Colley 2010). For instance, I found a few issues of how I conducted interviews and how the issues had negative effects on subsequent analyses. When I analysed the interview transcripts, I realised that when I asked more than one question at a time, the respondents tended to answer the easier part and neglected the part that would generate richer data. It would be more efficient to ask one question at a time to keep the interviewees focused. This would also make it easier to probe for more details (Yeo et al. 2014). In addition, during the various interviews, I asked my questions in a different order. However, maintaining a similar order across the interviews would have assisted in the analysis stage, when I needed to compare students' transformations and changing perspectives.

Data organisation can facilitate data analysis greatly by indexing and preparing the data for analysis (Flick 2014). For instance, data can be organised in a chronological order if it is ongoing and longitudinal research, or it can be arranged in terms of cases if it is a case-orientated study (Bryman 2016). Organising the data is an on-going process, which should

start from the beginning of data collection (Spencer et al. 2014). As I started gathering data, I created three separate folders on my computer for the three different schools I studied. After I recruited the 12 participants, a separate folder was created for each individual and saved within his or her corresponding school folder. All the data about each student, including audio-recorded interviews, classroom observation field notes, emails and reflective journals were stored in the participant's file and named after the data collection methods employed and the date. In this way, I could see clearly what data I had for each participant and examine the experiences and feelings of each case individually. At the same time, the students of the same school and same programme were grouped in the same file. The same group of students shared at least one class together, and so, their different performances and feelings could be compared and contrasted within the same context. This on-going data management provided a clear picture of the data I collected and a basis for the subsequent data analysis.

Start analysing data during data collection

Data analysis should not be postponed until after data collection. Rather, it should begin as early as possible so that researchers develop a deep understanding of data as during collection (Silverman 2011). Following a linear process of designing research, gathering and then analysing data, I barely considered how I would approach and make sense of my data before data collection, apart from deciding to use thematic analysis. My tight schedule of classroom observation prioritised data collection and delayed data analysis until I finished my classroom observations in the first semester. In hindsight, I should have started the data analysis earlier; because when I listened back to the recorded interviews, I found superfluous talking and also insufficient focuses on important issues. For example, in an interview with a female student, we spent fifteen minutes talking about her shopping experience but I failed to probe into her discussion of being closer to Asian students than to other English-speaking students. If I had

started to analyse the data in an early stage, I would have made the process of data collection more focused and thus made the data analysis more efficient.

Starting data analysis in an early stage can also help guide fieldwork practices and inspire necessary adjustments to the research design. In most qualitative research, ‘sticking with the original research design can be a sign of inadequate data analysis rather than demonstrating a welcome consistency’ (Silverman 2013, 234). At the beginning of the research, my original plan was to finish the first round of semi-structured interviews within a week to capture the participants’ initial feelings in the new learning environment. However, it took me two weeks to complete the interviews because of the limited time available after classroom observations and the unexpected rescheduling of the interviews. At the time, I was frustrated at not being able to carry out the original research design and became more demanding of the participants, which I failed to notice until two students withdrew from the study. However, after I calmed down and analysed the data I had collected in the first and second weeks, I found that my failure to stick to the original plan had not jeopardised the quality of the collected data. On the contrary, compared to the students interviewed in the first week, those interviewed in the second week had more to say about their initial feelings in the new learning context. If I had started analysing data earlier, it would have saved me from being panicked and I would have become more certain of the on-going data collection process. Start analysing data during data collection would ensure a better picture of the data collected and inform any necessary adjustments.

Conclusion

This contribution has presented a new researcher’s personal account of the messiness of fieldwork complicating her data analysis process. It is intended both as an informed reflection and a potential lesson for other novice qualitative researchers. Qualitative research rarely follows a smooth trajectory, and the non-linear, messy and complex fieldwork affects the data

analysis process (Silverman 2013). A well-planned research design and early consideration of the analysis process facilitate both data collection and data analysis, especially in the case of new researchers who often encounter various unexpected challenges. I, as one such researcher, have learned important lessons from my research experience and will continue to learn from the upcoming data analysis stage.

Proceed with caution: Lost in thematic coding

Carly Christensen

Introduction

After nearly a century of wielding education as an assimilative tool against Indigenous peoples, in 1972, the Canadian government instituted the policy of Indigenous self-governance over education (Battiste 2013). The process of decolonising Indigenous schooling tends to emphasise the inclusion of Indigenous languages, curriculum development, and the training of Indigenous teachers. Yet, special education assessments, curriculum and practices remain largely based on settler Canadian cultural norms (Phillips 2010). In the absence of culturally relevant special education programming, many Indigenous students with special educational needs are assessed and accommodated based on settler perceptions of normalcy. In addition, the rights of Indigenous peoples with disabilities remain absent in educational legislation, rendering Indigenous students with disabilities among the most vulnerable of this marginalised group (Phillips 2014). Realising that conceptions of disability are framed within cultural values (Oliver 1990) necessitates the pursuit of varying understandings of disability that are contextualised within the ideology, the environment, and the spiritual beliefs of Indigenous peoples.

In recognition of this ongoing site of settler oppression, my doctoral research explores conceptions of disability held by Anishinaabe secondary school students with disabilities,

with a view of informing the creation of culturally-based special education programming. The Anishinaabe are an Indigenous tribe predominantly located in central Canada. The research took place within Canada's subarctic region in an Anishinaabe-operated school system, servicing six Anishinaabe communities. In comparison to settler Canadians, self-governing Indigenous communities across Canada exist within complex systems of disparities and inequalities, touching on health, housing, access to clean water and education.

Taking into account this complex settler colonial setting, my research design seeks to deeply contextualise understandings of disability within the Anishinaabe community setting. Although it sought to centre Anishinaabe voices and knowledges, as well as Indigenous data collection tools, my initial attempts at data analysis recreated aspects of settler oppression, in part because the integration of the settler and Indigenous research participants seemed to forefront the settler school professions. However, Indigenous research methodologies primarily focus on epistemology and culturally appropriate data collection tools, while remaining underdeveloped in the decolonisation of data analysis procedures (Snow et al. 2015). This article reflects on particularities and possible methods of overcoming the silences of Indigenous voices during data analysis.

Research design

At the current stage in my research, I have conducted a two-month long pilot study in an Anishinaabe-operated secondary school in rural Ontario, Canada. I designed this pilot study to test not only my methods but to reflexively consider ways my main study could replicate settler oppression. This pilot study explored the research topic using a multisite case study involving three secondary school students, aged 17-19 years old who accessed special education services at their school. This pilot study included a range of data collection such as a series of student photovoice tasks, semi-structured interviews, talking circles, walking interviews, and my research journal.

The photovoice projects invited the students to take photos that captured their daily experiences especially targeting experiences of living with a disability at school and within their communities. These photos were discussed during semi-structured interviews. In addition, the Anishinaabe practice of talking circles was creatively employed as a data collection method under the direction of the local chiefs (Lavallee 2009). The talking circles could be considered similar to focus groups which were used to facilitate group discussions. The talking circles in my research focused on discussing self-selected student-generated photographs taken in response to the photovoice tasks. Each student case includes semi-structured interviews with teachers, family members and Anishinaabe chiefs. As such, data analysis for my doctoral research contends with the integration of different respondents' voices. The inclusion of teachers alongside Anishinaabe students and chiefs proved problematic during the analysis process.

Piloting data analysis

The challenges and processes involved in being able to synthesise different types of data are not often visible in published research, or discussed in doctoral research training (Bathmaker 2010). However, data analysis has the 'power to shape what comes to be known about someone's experience' (Willig 2013, 140). In cross-cultural research, like my own, hegemony can underpin the data analysis process causing the researcher 'to make invisible, to overlook, to exaggerate and to draw conclusions, based not on factual data, but on assumptions' (Smith 1999, 176). In an attempt to mitigate these issues, I conducted a two-month pilot study that included testing my data analysis process.

My data analysis procedure used thematic coding that involved devising a list of *a priori* codes, which were informed by my research questions and literature (Merriam 1998). As the coding ensued, additional codes developed based on patterns like frequency of occurrence, emphasis of respondents, taboo topics or disagreements between respondents

(Lapadat 2012). These codes merged, creating code families or split into sub-themes. This process appeared to render an integration of the settler and Indigenous voices involved in my pilot study research.

Thematic coding and the silencing of voices

During the process of using the codes to generate a written account of each case, I realised that my use of thematic coding seemed to result in the absence of student and chief voices.

This misaligned with my research commitment to becoming an ally that empowered Indigenous voices to be heard throughout the research process. The following excerpt is an early attempt to write my pilot study findings generated from my use of thematic coding.

This excerpt explains some of the learning needs of a secondary school student.

Focusing on tasks for prolonged periods of time was difficult for this student. His teacher stated that she had ‘talked to him about how he has a hard time staying on task and doesn’t get work done as fast as other students.’ His teachers reminded him several times an hour to ‘get back to work.’ In attempting to address his focusing issues, his teachers gave him frequent breaks and divided assignments into tasks because they believed he had focusing issues.

One problem that stands out, with respect to the above excerpt, is the sole representation of the teacher voice. The minimisation of the student voice could have been caused by the teachers generating more codes than students (Colley 2003). It seemed that most of my adult participants spoke with greater clarity and more complex descriptions than the students. The silencing of the student voice is problematic, because my research design was premised on promoting the voices of students with disabilities and Anishinaabe peoples. Disability research frequently ascertains the accounts of those with disabilities via caregivers and family members of these individuals, rather than the individuals with the disability (Singal and Muthukrishna 2014). Indeed, my use of photovoice provided a medium that facilitated expression for individuals with various types of disabilities. Yet, even with employing

photovoice which was designed to promote the voices of the students, these voices were lost during the analysis of the photovoice interviews.

Given that codes merge and split as the process continues, conscious choices around the ordering of coding the transcripts could assist in centring Anishinaabe voices. As such, in my main study the thematic analysis procedures will start with coding all the student interviews, followed by the Anishinaabe chief and teacher interviews. Starting the coding process with the students' transcripts could help to preserve the student voice and centre peoples with disabilities (Colley 2003). The codes generated from the teacher transcripts could be used to highlight differences and similarities with the students.

Settler dominance also occurred in my pilot study because my data analysis procedure failed to engage with Anishinaabe oral traditions. All of the teachers in the pilot study were non-Indigenous. Oral traditions are commonly considered an essential characteristic of Indigenous peoples in North America (Cajete 2000). The Anishinaabe oral tradition relies on rich, non-linear storytelling, the use of metaphor, symbolism and spiritualism (Anderson 2011). As such, in my interviews the chiefs often responded to questions by telling a symbolic story that was difficult to split into codes. My struggle to engage with orality during my application of thematic coding caused the chiefs' voices to be categorised into few codes. After conducting the analysis, I realised that my findings never directly quoted any Anishinaabe chiefs.

Oral traditions are largely ignored or diminished in the literature concerning qualitative data analysis techniques (Banks-Wallace 2002). Some researchers suggest that instead of trying to slice oral stories into codes, overall themes running through the stories could be used to inform the generation of codes and used to interpret cultural beliefs (Smith 1999). Other Indigenous scholars believe that oppressing oral traditions should be avoided by including the full dialogue shared during the interview (Wilson 2008). Yet, this suggestion

becomes difficult to operate because of word count limits. In attempting to effectively incorporate oral traditions in my data analysis process for my main study, the long excerpts of chiefs' transcripts will be used to provide cultural context by informing the creation of overall codes.

In preparation for my main study, reflexively considering these issues leads to modifying my thematic analysis procedures in an attempt to address the issues of muting students' voices and oppressing orality. Constant reflexivity is necessary in the development of techniques that seek to decolonise qualitative data analysis, especially at the stage of data analysis.

Conclusion: Hearing through hegemony

Not only did my thematic coding practices contradict with my commitment to student and disability voice research, but settler domination over Indigenous peoples was also recreated during thematic coding. Regrettably, academic literature rarely explores data analysis and the potential oppression of the voices of individuals with disabilities. This oversight could relate to the overall lack of literature regarding techniques of qualitative data analysis (Patton 2002), the underrepresentation of the voice of individuals with disabilities (Schleien et al. 2013) and the ongoing need to decolonise research practices (Smith 1999).

As I approach the data analysis stage in my main study, I am continually searching for techniques that address the integration of different participants' voices during data analysis. Yet, rarely is reflexivity regarding data analysis techniques discussed in the literature. This must not be the case within the settler colonial context of my doctoral work. Reflexivity is crucial in unearthing hegemonic assumptions that may underpin my data analysis procedure, and therefore it is crucial to my attempt to carry out the data analysis process free from oppressive practices.

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