

International Journal of Research & Method in Education



ISSN: 1743-727X (Print) 1743-7288 (Online) Journal homepage: https://www.tandfonline.com/loi/cwse20

The balance and imbalance of sampling former teachers hidden-by-choice: a snowball in summer

Lynnette Mawhinney & Carol R. Rinke

To cite this article: Lynnette Mawhinney & Carol R. Rinke (2019) The balance and imbalance of sampling former teachers hidden-by-choice: a snowball in summer, International Journal of Research & Method in Education, 42:5, 502-512, DOI: 10.1080/1743727X.2018.1513480

To link to this article: https://doi.org/10.1080/1743727X.2018.1513480

	Published online: 29 Aug 2018.
	Submit your article to this journal 🗗
ılıl	Article views: 126
a a	View related articles 🗷
CrossMark	View Crossmark data 🗗





The balance and imbalance of sampling former teachers hidden-by-choice: a snowball in summer

Lynnette Mawhinney oa and Carol R. Rinkeb

^aCollege of Education, University of Illinois at Chicago, Chicago, IL, USA; ^bSchool of Social and Behavioral Sciences, Marist College, Poughkeepsie, NY, USA

ABSTRACT

In this paper, we explore the challenges inherent in conducting research with a hidden population – how to conduct research with teachers who have left the classroom. Capturing the storied experiences of this group is vital to understanding how to effectively recruit, prepare, support, and sustain teachers in US classrooms for our next generation of students. Although not typically considered vulnerable, this population of "teacher leavers" remains hidden-by-choice because of a voluntary severing of ties with former schools and school districts. In this paper, we chronicle our efforts to identify an appropriate sampling method for this population, our selection of snowball sampling because of the hidden nature of individuals, and our efforts to use snowball sampling to construct a national sample of teacher leavers. We conclude by identifying the resulting areas of balance and imbalance in our sample, their possible explanations, and their subsequent implications for informing thoughtful sampling methodology.

ARTICLE HISTORY

Received 2 February 2018 Accepted 28 June 2018

KEYWORDS

Snowball sampling; sampling; hidden samples; former teachers; teacher leavers

Introduction

This article explores a methodological dilemma: How to conduct research with teachers once they have left teaching? In the field of education, this is a critically important group of participants, as almost 50% of new teachers leave the field within their first five years in the classroom (Ingersoll 2003b). Educational research that seeks to understand the perspectives and lived experiences of this important population is vital to developing policies and practices that recruit, support, and sustain teachers in their careers over time. However, this group, hereafter termed "teacher leavers," are also an infamously difficult group to identify, as teacher leavers have inherently severed their ties with formal educational institutions and shifted into a variety of other, often disconnected fields. School districts are reluctant to share contact information for their former employees and few other systematic methods exist for locating and connecting with teacher leavers. Teacher leavers are effectively "off the grid."

In this article, we argue that while typically not considered a vulnerable participant pool, teacher leavers do in fact constitute a "hidden population" because one aspect of their identity is hidden – their past experience as a classroom teacher. In categorizing teacher leavers as a hidden population, we are also acknowledging the intersectionalities that exist within individuals' identities (Bell 2016), as participants may be fully visible in one dimension but hidden in another. Due to the hidden nature of teacher leavers, we argue that the most effective methodological approach for recruiting participants is through snowball sampling methods.

In this article, we chronicle our effort to use snowball sampling methods with this unique hidden population through a collective case study (Stake 2005) of teachers who have left classroom teaching. Specifically, as is common in collective case study, the participants "are chosen because it is believed that understanding them will lead to better understanding, and perhaps better theorizing, about a still larger collection of cases' (Stake 2005, 446), and the larger collection of cases in this study is teacher leavers. In case studies, "the stories of those 'living the case' [were] teased out" (Stake 2005, 445). We detail our initial recruitment plans, our realization of the need to sample for hidden populations, our process of enacting that sampling procedure in this particular context, and our reflection on the balances and imbalances of this endeavour. Browne (2005) highlights, "this is not to suggest that snowball sampling or any sampling technique is flawless; rather advantages and disadvantages are subjective and often based on research precepts of what is right and wrong" (57). During our research process, we found snowball sampling to be simultaneously advantageous and taxing, and in this study, fell short in many ways.

By discussing our methods and challenges, we hope this article serves to deepen the limited literature around sampling (Noy 2008; Reybold, Lammert, and Stribling 2013), grounded in the realities of putting it into action. Noy (2008) argues that the discussion of sampling is often overlooked in the literature because it is the "least sexy facet of qualitative research" (328), often the least criticized by journal reviewers (Reybold, Lammert, and Stribling 2013), and the most dormant in literature discussions (McLean and Campbell 2003). This paper proposes to counter that trend by carefully considering our selection, use, and reflection upon snowball sampling with teacher leavers.

Contextualizing snowball sampling

Snowball sampling is one of most common strategies for identifying participants in qualitative research (Noy 2008; Heckathorn 2011). Heckathorn (2011) explains that while snowball sampling was originally developed as a method for studying social networks, over the past 50 years it has evolved into one of the standard techniques for qualitative research. In essence, snowball sampling proceeds as such:

[Snowball sampling] begins with a convenience sample of people from the hard-to-reach population. (The convenience sample is of course *not* a random sample from the hard-to-reach population, since it is not possible to obtain a random sample from a hard-to-reach population). [Snowball sampling] then relies on people in the convenience sample to select other people from the hard-to-reach population ... Then the people in the first wave select other people from the hard-to-reach population. (Goodman 2011, 350)

Thus several waves of participants are selected, starting from an initial seed of convenience participants.

Snowball sampling is often toted as highly effective and valuable for hidden populations (Browne 2005; Noy 2008; Sadler et al. 2010; Waters 2015; Griffith, Morris, and Thakar 2016) and when conducting research around sensitive areas or with vulnerable participants (Biernacki and Waldorf 1981) because its approach works around, rather than with, standard social institutions. Researchers do not access institutions directly, or use them as a space for participant recruitment, but move around these spaces with the connections built through snowball sampling. For instance, Browne (2005) utilized snowball sampling to access non-heterosexual women, Griffiths et al. (1993) found it effective for identifying drug addicts not currently affiliated with treatment centres, and Kogan et al. (2011) used the method to identify rural African American emerging adults. Similar examples abound, as researchers increasingly rely on snowball sampling for the recruitment of vulnerable and/or hidden groups of participants.

What makes teacher leavers unique is that they are often fully visible and institutionally-affiliated within certain contexts, as they may be enrolled as graduate students or employed at non-profit organizations. However, due to the nature of their career paths and their own life choices, their affiliations with educational institutions remain hidden, forcing researchers to move around rather than through educational institutions, as mentioned above. Thus, teacher leavers actually fall into



another category of hidden participants, those who are "hidden-by-choice" due to life experiences and context (Noy 2008), as with Noy's (2008) study of backpacker tourists. Noy (2008) argues that participants who are hidden-by-choice, "are not excluded from hegemonic forces, but, being part of the hegemony, exclude themselves from the public" (331). Building upon that idea, teacher leavers also exclude themselves from the public, but only with certain aspects of their identity – in particular, their teacher identity. This was often caused by the emotions of guilt leaving the classroom (Mawhinney and Rinke 2017) or others opted to not be visible in order to leave behind their former teaching selves. They voluntarily severed their ties with former schools and school districts.

Case study background

Within education, it is commonly recognized that there is a crisis of teacher attrition, with approximately 50% of teachers exiting the field within their first five years (Ingersoll 2003b; Gray and Taie 2015) on the job. Teacher attrition and retention is of primary concern because of the high costs of turnover to schools, students, and the teachers themselves (Grissmer et al. 2000; Rinke 2014). As the profession demands more from teachers without subsequent increases in compensation, improved working conditions, or prestige, it has become critical to determine how to recruit, support, and sustain teachers in the classroom for the next generation of students (e.g. Macdonald 1999; Smethem 2007; Quartz et al. 2008; Mawhinney 2014; Rinke 2008, 2009, 2014; Mawhinney and Rinke 2017; Petchauer and Mawhinney 2017; Rinke and Mawhinney 2017).

As former teachers (teacher leavers) ourselves and educational researchers, we had already conducted several studies working within pre-determined and well-defined urban school districts. In one study, we followed beginning educators to better understand the decision-making process leading them out of the classroom (Rinke 2008, 2013, 2014). For this study, participants were current teachers at the inception of the study and identified by the district's human resources office. In another study, we sought to understand what brought teachers to the classroom in the first place and conducted qualitative interviews with pre-service teachers in teacher preparation programmes at three different higher education institutions (Mawhinney, Rinke, and Park 2012; Rinke, Mawhinney, and Park 2014; Park, Rinke, and Mawhinney 2016). Here again, participants were students in our teacher education programmes (although we may not have taught them), where we had already secured access.

In this particular study, we aimed to build upon our previous work by exploring the perspectives and experiences of teachers who had already left the classroom, the population of "teacher leavers" previously identified. Our goal was to inquire into the replication of findings from one school district to a national sample. We also hoped to look broadly across the professional lifespan (Goodson and Sikes 2001), capturing participants' reasons for entering the profession, experiences in the classroom, decisions to leave teaching, and current career paths. We elected to use a life histories approach that placed teacher leavers' experiences into a larger and more meaningful context (Cole and Knowles 2001). We developed a semi-structured interview protocol that intended to capture teacher leavers' career development across various career stages, along with their own personal interpretations of those experiences. We also set out to understand the interaction of the personal with the professional in these various decision-making stages (Rinke and Mawhinney 2014).

Prior to conducting interviews, we also explored the existing scholarship around teacher leavers, but found the research in this area to be quite limited due to the methodological challenges inherent in working with this population. The most common approach to understanding the dynamics of teachers' career paths in the United States has been to examine large scale, survey data sets from the National Center for Educational Statistics (NCES) in order pinpoint why teachers left, but these data sets are complicated by teachers whom left due to retirement (Fowler and Mittapalli 2006; You and Conley 2015; Hancock 2016). We identified two qualitative studies during our search that privileged the voices of the teacher leavers themselves: Harfitt's (2015) research from Hong Kong that discusses two teachers that left and returned back to the profession two years later, and

Schaefer, Downey, and Clandinin (2014) with four Canadian teacher leavers who left within the first five years of teaching.

In short, existing approaches appeared to rely either on large-scale, anonymized data sets or small-scale convenience samples. We were unable to locate previous research that both drew upon a geographically diverse sample of teacher leavers while also captured their lives and experiences. Thus, we chose to take on the challenge of conducting a large-scale qualitative study with narratives of teacher leavers' storied experiences across the United States.

We used some of our own areas of curiosity to craft our research question. Specifically, we wanted to know, "How do teacher leavers, working across a variety of school contexts, experience their careers over time?" We explored the research from three standpoints: entering the field, experience within the field, and exiting the field. In this way, we aimed to expand existing understandings of teachers' career life cycles (Huberman 1989; Day and Gu 2010) and the life history approach did, in fact, reveal that teacher leavers were responsive to structural, personal, and professional factors in their career development (Mawhinney and Rinke 2019). Once we had established our research protocol, we anticipated that finding participants would be straightforward. Little did we know that identifying participants would become the central challenge of the project.

The original methodological plan

Our original goal was to identify 40 teacher leavers from across the United States, targeting the four major regions (East, South, Midwest, and West). When we set our original target of 40 participants, we assumed that by gathering more interviews, we could draw from a broader cross-section of storied experiences. We set selection criteria as teacher leavers who: (1) have taught at least one year within a public school district; and (2) left teaching on their own accord prior to retirement between 2004 and 2014. The purpose was to also get a representative range of participants that reflect the variety of teacher preparation backgrounds routes available within the United States. We sought to pinpoint 80% of the participants that entered the teaching profession through traditional methods (e.g. undergraduate or masters programmes in education), with the remaining 20% entering through alternative routes (e.g. Alternative Route programmes, Teacher Residency programmes, or City Fellows programmes).

Moreover, we decided to intentionally focus on two specialty areas of secondary education. The purpose was to start small with the hopes to growing the project over many years to include other secondary areas and primary education. Thus, our first target group was on secondary science teachers, since they are a notoriously hard-to-staff group. Due to their specialized science background and skillset, they are considered to have a higher status position (Hoyle 2001), which provides job opportunities outside of teaching with higher pay (Murnane and Olsen 1990). Further, the research shows that this group has a larger rate of dissatisfaction (Ingersoll 2003a) when compared to other secondary areas. The second target group was on secondary English (language arts) teachers. Of all the specializations in secondary education, this area has the largest workload (Hancock and Scherff 2010) due to added amount of paperwork involved in grading essays and other student writing. Using this empirical background as a guide, we anticipated that these two subject areas would have a large participant pool from which to draw.

We were aware that in aiming for a national sample with four key regions and thousands of independent school districts, higher education programmes, and professional networks, there was no systematic way to approach participant sampling. In this way, this study differed substantially from our previous efforts, which relied on participants currently affiliated with an existing K-12 or higher education institution. Working in the United States, local control of education made the task all the more challenging, as schools are not organized by state, county, city, or even electoral jurisdictions, but rather through locally-determined districts of various sizes and organizational structures (Tyack 1974).

Knowing that a systematic, representative approach was simply an impossibility (Goodman 2011), we began looking more carefully into commonly accepted sampling methods for researchers



working with hard-to-find populations. After returning to the literature, we made the determination that our population of teacher leavers in fact constituted a hidden population and made the decision to pursue snowball sampling.

Our approach to snowball sampling

We were aware that the standard approach for beginning snowball sampling started with a small convenience sample of individuals known by the researchers. This convenience sample then referred a second wave of participants, who in turn selected a third wave as the process proceeded. However, our study was unique in that we were not looking within one circumscribed population, but rather for a diverse pool of individuals from across several regions of the United States. For this reason, we realized that we needed to pursue multiple recruitment avenues simultaneously.

We also realized that we had to leverage technology to our advantage (Curtis 2014). The Internet provides a wealth of access for participant recruitment, while facilitating a breadth of geographic location (Hamilton and Bowers 2006). It has also been shown to be less labour intensive than tradition recruitment methods, such as flyers, posters, or mailings (James, Taylor, and Francis 2014). Eide and Allen (2005) further discuss how traditional recruitment methods may be unproductive and create missed opportunities for participants. But, we were cognizant of Hamilton and Bowers (2006) point that "like any other sampling plan, use of the Internet must make sense in relations to the research question and not be advocated based simply on ease and researcher accessibility" (824). We also considered that this recruitment approach might limit access among older participants or those unfamiliar with contemporary technologies. Using this background as our guide, we decided to pursue recruitment using a variety of technology-based methods. Vignettes of our individual experience follow:

Lynnette's connections

I initially advertised the study and the search for participants on my personal Facebook page. Then, I linked (or tagged) other professors in academe. My thought process behind these links was that these professors were close colleagues and even friends in the field of teacher education. They would have access to teacher leavers either through their own personal networks or ongoing school partnerships. Moreover, like us, most of these professors were teacher leavers themselves. My hope was that as teacher leavers, they would somehow be able to identify and unearth other teacher leavers. Sadly, the Facebook advertising did not prove as fruitful as I hoped. I was able to identify one participant, who referred two additional participants for the study, for a total of three (see Table 1).

My next step was to advertise on a listsery of an Urban Education graduate programme that was not affiliated with our institutions. This listserv has past and present programme participants, including a large number of teacher leavers. The listsery proved to be the best tool for gaining access to participants, as seven reached out to me directly, expressing interest in participating in the research. However, only three of the participants provided snowball referrals, resulting in a modest-sized network.

Table 1. Participant recruitment.

	Initial Advertisement	Snowball Referrals	Total
Lynnette			
Facebook	1	2	3
Listserv	7	3	10
Word of Mouth	2	0	2
Carol			
Emails to Colleagues	4	1	5
Emails to Former Students	1	0	1
Listserv	4	0	4

Lastly, I also spoke about the project with other scholars at my institution as well as in social situations. Through the word of mouth, I gained two more participants, but without any snowball referrals.

With the five snowball referrals I received in total, most of the referents wanted to reach out directly to their connections to gauge interest. I was never given the contact information directly, as I found people were still cautious about "outing" any former teachers who might not be comfortable discussing their past. For example, one colleague reached out to a former teacher-turned-photographer on the West Coast. Because they used to teach middle school together, she anticipated interest and introduced us electronically. However, this referral did not want to talk about the chapter of her life spent as a teacher. She instead planned to keep the book closed, so to speak.

Carol's connections

As someone who is not naturally fluent in social media and less networked than Lynnette, I was perhaps more apprehensive about the recruitment phase of this study, as well as the need to rely upon up-to-date technological methods to reach participants. Not surprisingly, although I also posted an advertisement on my rarely-used Facebook page, this effort did not result in any interested participants. I also decided to use a method I had relied upon in an earlier study, recruitment of graduates from my current teacher preparation programme. After compiling a list of all programme graduates from the last 10 years, I sent a direct email to each alumnus with information about the study. Some emails were returned, and I did receive email responses from several individuals who were still in the classroom. However, this method ultimately did not result in any participants for the study.

Following these experiences, I realized there was a need to reach out to individuals closer in age to many recent teacher leavers. I decided to send direct emails to many of my former students, positing that they might know colleagues who had decided to leave the classroom. Although this resulted in a number of referrals, only one of the recommended participants fell within our selection criteria of former secondary science or English teachers, thus many had to be turned away from the study.

Finally, I reached out individually to colleagues working at institutions across the country. This provided to be the most productive method for recruitment. Many of these current colleagues had been graduate students with me either during my masters programme or doctoral programme. Due to the complex nature of job searching in higher education, these colleagues had taken positions in diverse regions of the country. Although I had been in touch with some of these colleagues in recent years, others necessitated renewing contact through a phone call or other connection. Reaching out directly to colleagues helped me to identify four participants in three regions of the United States. One of these participants referred another for a second wave in a hard-to-reach region.

One former colleague in particular took the extra step of posting my advertisement on her listserv of science teachers interested in conducting their own scientific research. This proved to be a highly productive method, as four participants reached out to me directly after seeing the advertisement on their listserv. Whether it was the existing interest in research or the level of trust generated from the individual who posted, this served to identify quite a few former science teachers who were interested in sharing their experiences.

Financial incentives

During the research planning stage, we planned to provide participants with financial incentives to compensate them for their time and effort. Carol received a small grant from her institution to fund \$10 Amazon gift certificates for all those who participated. We also anticipated that the financial incentive would help to strengthen interest during the snowball sampling process.

To our surprise, we found that most of the participants did not even realize that a financial incentive existed. They were happily surprised at the end of the interview to receive the gift, but we found



the financial incentive did not directly draw participants to the study. Instead, we continually heard two reasons why participants chose to be interviewed. First, they never previously had the chance to share their story and wanted to be heard; second, they too conducted research and valued the idea of scholarship. People who are motivated to participate in the research in the first place are influenced by their beliefs (Becker et al. 2004). This can explain why we may have had so many current academics in our research, as they trust in the transformative power of research.

Scourged samples

Although snowball sampling can be interpreted to be a less rigorous method, it is actually highly labour intensive. Moreover, it relies upon the researcher's own connections and social network, which can become overtaxed (Waters 2015). We found this to be true in our case, as we came to the point where snowball sampling transitioned into, what Groger, Mayberry, and Straker (1999) call "scourging sampling." This is when the snowball method turns into "desperate and continuing efforts, against the mounting odds, to round out the collection of individuals with relevant types of experiences we know to exist but have not been able to capture" (Groger, Mayberry, and Straker 1999, 830). As researchers, we did begin to feel exactly this way after nine months of active recruitment efforts. In total, we as authors were able to identify 25 participants, although the final participant came in months after due to a belated response from one of Carol's colleagues. The difficulty of identifying participants was truly surprising, as our original goal had been to find 40 from among the thousands of teacher leavers across the United States. However, we had reached a point where we did not feel we could tax our social networks and resources any further without negative consequences. Even as is, we as researchers are now reluctant to turn to our social network for future research studies, at least until a requisite amount of time passes. Snowball sampling typically ends when the chain of referrals either ceases at a natural stopping point or reaches saturation (Biernacki and Waldorf 1981). We came to a natural stopping point far sooner than we had anticipated.

Waters (2015) highlights Goodman's (2011) work best by stating that, "hard-to-reach populations are hard to reach, and one should not expect the task of reaching hidden populations to be easily solved through the application of a magical wand of a sampling technique" (377). These words served as a guide for us, as we had certainly underestimated just how difficult it would be to locate participants for our study. As Waters (2015) experienced, snowball sampling for our study also did not yield the targeted number of participants and even with the goal of snowball sampling, we ended up with more participants identified through convenience sampling than any other method. Although our approaches were effective for accessing a hidden population, they came with corresponding limitations on our effort to construct a substantial sample size.

In our case, snowball sampling also resulted the self-selection of individuals with similar, shared experiences (Becker et al. 2004). When looking at our participant pool holistically, many of the participants look like us (e.g. former urban teachers, live on the East Coast). Due to the connections inherent in our network, we selected many individuals who taught in urban schools and are connected to higher education in some way. It turns out that we had "privileged access" (Griffiths et al. 1993), which proved beneficial in terms of encouraging the teacher leavers to share their intimate stories. However, it also resulted in a participant pool that looked much like us.

Teacher leavers: areas of balance and imbalance

The participants

In all, we were able to identify 25 participants, rather than the 40 we had originally anticipated, despite tremendous effort (see Table 2). There were other goals we simply were unable to attain, such as securing representation from urban, suburban, and rural areas. Instead, one participant taught in a suburban district, one in a rural district, and the remainder in a range of urban areas.



Based on this, we utilized Milner's (2012) typology of urban education, in which he identifies three categories of urban schools to distinguish among them: (1) urban intensive (large metropolitan districts), (2) urban emergent (small cities with fewer than one million people), and (3) urban characteristic (suburban and rural areas experiences challenges related to urban context).

We were able to locate participants who had teaching experience in multiple regions of the United States (East, South, Midwest, and West), and 14 states were represented this our study. This created a richness of perspective in their storied experiences. But, we found that there was an imbalance favouring participants from the East Coast region – either exclusively or during their tenure as a teacher. An additional imbalance occurred in teaching specialty areas. A significant portion of the teachers specialized in science (60%), as compared to English or multiple subject areas. Lastly, although we aimed to recruit 80% of our participants from traditional, university-based certification programmes, we found only 56% who were prepared through that route. On the other hand, we aimed for 20% of participants from alternative preparation routes, and found 44% instead.

Despite the many imbalances, there were some surprising successes from our recruitment methods. First, we had substantial representation from teachers of colour. Currently, the majority of US teachers are White, female, and monolingual (Papay 2007). According to the US Bureau of Labor Statistics (2014), the demographics of secondary teachers are 85.8% White, 10% Black, 2.2% Asian, and 7.6% Latino. The teacher leavers in our sample 68% White, 12% Black, 4% Asian, and 16% from multiple backgrounds. Our representation of teachers of colour ranked higher than the national average, making for more enriching and balanced voices from those often unheard.

Our second success centred on teacher leavers' average length of stay in the classroom. Nationally, almost 50% of teachers exit the field within five years (Ingersoll 2003b; Gray and Taie 2015), with urban teachers more likely to leave within the first three years (Ingersoll 2003b). However, among our participants, the average length of time spent in classroom teaching was 7.08 years. The total range was from two to 23 years of classroom experience. Many of our participants taught for longer than the national average, indicating that they had moved out of the survival phase and into mid-career and later-career development. It also provided them with deeper and more enriching lived experiences to share.

Defining the imbalances

In retrospect, it seems clear that many of the imbalances in our participant pool came from areas of our own identity and our snowball sampling method that started with a convenience sample and grew from there. At the time, both of us as researchers lived and worked on the East Coast, thus we found overrepresentation of teachers from the East Coast region in our sample. Both of us are

Table 2. Results from the participant pool.

Table 2. Results from the participant pool.			
Original Goal	Actual Results		
40 participants	25 participants		
Balance of experience in urban, suburban, and rural	88% taught in urban schools, 4% rural, 8% suburban ^a		
Balance of teachers across four regions (East, South, Midwest, and West)	19 East, 6 South, 5 Midwest, 6 West ^b		
Balance of science and English specialty areas	60% science, 24% English, 12% special education (taught either science or English, 4% special education (taught both subject areas)		
80% educated through traditional education/university-based programmes (undergraduate, masters); 20% certified through alternative routes (e.g. Alternative Route, Teacher Residency, etc.)	56% educated through traditional education/university-based programmes; 44% certified through alternative routes		

^aThe rural and suburban schools of these participants can be considered urban characteristic schools (Milner 2012), so in actuality, we had 100% from urban-based schools.

^bSome teachers leavers taught in multiple regions in the United States, so some participants are counted multiple times. This is why we did not represent the number in percentages.

teacher leavers from urban districts, thus our sample resulted in an overrepresentation of participants from urban districts. And Lynnette is a person of colour, perhaps resulting in a stronger-than-anticipated identification of teachers of colour in our sample.

Like our participant pool, other areas of imbalance "snowballed" out from our original demographics. Given that many of the participants were from urban areas, we found a higher-than-anticipated percentage of teachers prepared in alternative certification programmes, which is a characteristic of teachers from urban schools. Likewise, science teachers report the highest levels of dissatisfaction with the profession. This may have resulted in a higher proportion of science teachers, as compared with English teachers, due to the nature of the subject areas included. We do wonder if the sample and findings maybe turned out differently if we had included other subject areas, such as Social Studies, and grade levels, such as primary teachers.

Finally, we were intrigued by the seemingly high number of participants who remained within the field of education. Although nationally these numbers are unknown, within our sample 56% remained in non-teaching roles in education, while 44% engaged in fields completely outside of teaching (e.g. medicine, science, business, religion, government, or family caregiving). We are not entirely clear on the reasoning behind these numbers. On one hand, it is possible that our networks led us to individuals who are still connected with the field of education in some capacity. On the other hand, it is also possible that those connected with education self-selected to participate in the study, due to a level of trust, interest, or curiosity about the research study. It may be impossible to tease out these various causes, but it is clear that we were somewhat more likely to recruit individuals still connected to the field of education.

Conclusion

Waters (2015) highlights four key principles of using snowball sampling: (1) it is most effective when not tackling an extremely sensitive topic, (2) participants do not perceive negative outcomes to their involvement, (3) the researchers are members of the group being researched, and (4) participants are connected to some kind of social network. This research study fit all four criteria for Water's framework to snowball sampling, demonstrating that snowball sampling was an appropriate methodological choice for identifying participants from this particular hidden population. However, despite the fit between study design and methods, we still faced considerable limitations in constructing our sample. Browne (2005) notes:

Social networks, as channels for recruitment, can be an advantage in some respects (for example, including those often ignored in studies that rely on random or representative sampling) yet a disadvantage in others (for example, excluding those not within friendship groups) (Browne 2005, 57).

In this study, we found that relying on our social networks to initiate the snowball sampling process enabled us to construct a geographically diverse sample of teacher leavers to inform our research question, a sample that otherwise may have been unavailable. However, imbalances inherent in our own identities and social networks translated across our sample, infusing implicit characteristics into the recruitment process. We encourage future researchers to "think forward" (Reybold, Lammert, and Stribling 2013, 700) as they consider the complex nature of hidden populations with respect to intersectionality of identity as well as the influence of our own social networks and the characteristics of the initial convenience sample in shaping the later population sample. By carefully considering these, among other features, we as researchers can more intentionally attend to the sampling process as a key methodological element.

Acknowledgments

We would like to thank The College of New Jersey's School of Education Mini-Grant and Marist College's Office of Academic Affairs summer research grant for funding this project.



Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by The College of New Jersey; Marist College.

ORCID

Lynnette Mawhinney http://orcid.org/0000-0002-6662-6941

References

Becker, Heather, Greg Roberts, Janet Morrison, and Julie Silver. 2004. "Recruiting People with Disabilities as Research Participants: Challenges and Strategies to Address Them." Mental Retardation 42 (6): 471–475.

Bell. Lee Anne, 2016, "Theoretical Foundations for Social Justice Education." In Teaching for Diversity and Social Justice, edited by Maurianne Adams and Lee Anne Bell, 3rd ed., 3-26. New York: Routledge.

Biernacki, Patrick, and Dan Waldorf. 1981. "Snowball Sampling: Problems and Techniques of Chain Referral Sampling." Sociological Methods & Research 10: 141–163.

Browne, Kath. 2005. "Snowball Sampling: Using Social Networks to Research Non-Heterosexual Women." International Journal of Social Research Methodology 8 (1): 47-60.

Cole, Ardra L., and Gary J. Knowles. 2001. Lives in Context: The Art of Life History Research. Walnut Creek, CA: AltaMira Press. Curtis, Brenda L. 2014. "Social Networking and Online Recruiting for HIV Research: Ethical Challenges." Journal of Empirical Research on Human Research Ethics 9 (1): 58-70.

Day, Christopher, and Qing Gu. 2010. The New Lives of Teachers. New York: Routledge.

Eide, Phyllis, and Carol B. Allen. 2005. "Recruiting Transcultural Qualitative Resarch Participants: A Concpetual Model." International Journal of Qualitative Methods 4 (2): 1-10.

Fowler, William J., and Kavita Mittapalli. 2006. "Where Do Public School Teachers Go When They Leave Teaching?" ERS Spectrum 24 (4): 4-12.

Goodman, Leo A. 2011. "Comment: On Respondent-Driven Sampling and Snowball Sampling in Hard-to-Reach Populations and Snowball Sampling not in Hard-to-Reach Popluations." Sociological Methodology 41: 347–353.

Goodson, Ivor F., and P. Sikes. 2001. Life History Research in Educational Settings: Learning From Lives. Philadelphia, PA: Open University Press.

Gray, Lucinda, and Soheyla Taie. 2015. Public School Teacher Attrition and Mobility in the First Five Years: Results From the First Through Fifth Waves of the 2007-08 Beginning Teacher Longitudinal Study (NCES 2015-337). U.S. Department of Education. Washington, DC: National Center for Education! Statistics.

Griffith, Daniel A., E. Scott Morris, and Vaishnavi Thakar. 2016. "Spatial Autocorrections and Qualitative Sampling: The Case of Snowball Type Sampling Designs." Annals of the American Association of Geographers 106 (4): 773–787.

Griffiths, Paul, Michael Gossop, Beverly Powis, and John Strang. 1993. "Researching Hidden Populations of Drug Users by Privileged Access to Interviewers: Methodological and Practical Issues." Addiction 88: 1617–1626.

Grissmer, David W., Ann Flanagan, Jennifer H. Kawata, and Stephanie Williamson. 2000. Improving Student Achievement: What State NAEP Scores Tell Us. Arlington, VA: RAND.

Groger, Lisa, Pamela S. Mayberry, and Jane K. Straker. 1999. "What We Didn't Learn Because of Who Would Not Talk to Us." Qualitative Health Research 9 (6): 829-835.

Hamilton, Rebekah J., and Barbara J. Bowers. 2006. "Internet Recruitment and E-mail Interviews in Qualitative Studies." Qualitative Health Research 16 (6): 821-835.

Hancock, Carl B. 2016. "Is the Grass Greener?: Current and Former Music Teachers' Perceptions a Year After Moving to a Different School or Leaving the Classroom." Journal of Research in Music Education 63 (4): 421-438.

Hancock, Carl B., and Lisa Scherff. 2010. "Who Will Stay and Who Will Leave?: Predicting Secondary English Teacher Attrition Risk." Journal of Teacher Education 61 (4): 328-338.

Harfitt, Gary Jame. 2015. "From Attrition to Retention: A Narrative Inquiry of Why Beginning Teachers Leave and Then Rejoin the Profession." Asia-Pacific Journal of Teacher Education 43 (1): 22–35.

Heckathorn, Douglas D. 2011. "Comment: Snowball Verses Respondent-Driven Sampling." Sociology Methodology 41:

Hoyle, Eric. 2001. "Teaching: Prestige, Status, and Esteem." Educational Management & Administration 29 (2): 139–152. Huberman, Martin. 1989. "The Professional Life Cycle of Teachers." Teachers College Record 91 (1): 31-57.

Ingersoll, Richard M. 2003a. "Turnover and Shortages among Science and Mathematics Teachers in the United States." In Science Teacher Retention: Mentoring and Renewal, edited by Jack Rhonton and Patricia Bowers, 1-12. Arlington, VA: National Science Education Leadership Association and National Science Teachers Association Press.



Ingersoll, Richard M. 2003b. "Is There Really a Teacher Storage?" University of Washington: Center for the Study of Teaching Policy.

James, Ainsley, Bev Taylor, and Karen Francis. 2014. "Researching with Young People as Participants: Issues in Recruitment." Contemporary Nurse 47 (1-2): 36-41.

Kogan, Steven M., Cyprian Weinert, Yi-fu Chen, Gene H. Brody, and LaTrina M. Slater, 2011, "Respondent-driven Sampling with Hard-to-Reach Emerging Adults: An Introduction and Case Study with Rural African Americans." Journal of Adolescent Research 26(1): 30-60.

Macdonald, Doune. 1999. "Teacher Attrition: A Review of the Literature." Teaching and Teacher Education 15: 835–848. Mawhinney, Lynnette. 2014. We Got Next: Urban Edcuation and the Next Generation of Black Teachers. New York: Peter Lang. Mawhinney, Lynnette, and Carol R. Rinke. 2017. "I Just Feel so Guilty: The Role of Emotions in Former Urban Teachers' Career Paths." *Urban Edcuation*. https://doi.org/10.1177/0042085917741726

Mawhinney, Lynnette, and Carol R. Rinke. 2019. There Has to Be a Better Way: Lessons From Former Urban Teachers. New Brunswick, NJ: Rutgers University Press.

Mawhinney, Lynnette, Carol R. Rinke, and Gloria Park. 2012. "Being and Becoming a Teacher: How African American and White Preservice Teachers Envision Their Future Roles as Teacher Advocates." The New Educator 8 (4): 321-344.

McLean, Carl A, and Catherine M, Campbell, 2003. "Locating Research Informants in a Multi-Ethnic Community: Ethnic Identifies, Social Networks and Recruitment Methods." Ethnicity & Health 8 (1): 41-61.

Milner, H. Richard. 2012. "But What is Urban Education?" Urban Education 47 (3): 556-561.

Murnane, Richard J., and Randall J. Olsen. 1990. "The Effects of Salaries and Opportunity Costs on Length of Stay in Teaching: Evidence From North Carolina." Journal of Human Resources 25 (1): 106-124.

Noy, Chaim. 2008. "Sampling Knowledge: The Hermeneutics of Snowball Sampling in Qualitative Research." International Journal of Social Research Methodology 11: 327–344.

Papay, John P. 2007. The Teaching Workforce. Washington, DC: The Aspen Institute.

Park, Gloria, Carol R. Rinke, and Lynnette Mawhinney. 2016. "Exploring the Interplay of Cultural Capital, Habitus, and Field in Life Histories of Two West African Teacher Candidates." Teacher Development 20 (5): 1-19.

Petchauer, Emery, and Lynnette Mawhinney, eds. 2017. Teacher Education Acorss Minority Serving Institutions: Programs, Policies, and Social Justice. New Brunswick, NJ: Rutgers University Press.

Quartz, Karen Hunter, Andrew Thomas, Lauren Anderson, Katherine Masyn, and Barraza Lyons. 2008. "Careers in Motion: A Longitudinal Retention Study of Role Changing among Early-Career Urban Educators." Teachers College Record 110 (1): 218-250.

Reybold, L. Earle, Jill D. Lammert, and Stacia M. Stribling. 2013. "Participant Selection as a Conscious Research Method: Thinking Forward and the Deliberation of 'Emergent' Findings." Qualitative Research 13 (6): 699-716.

Rinke, Carol R. 2008. "Understanding Teachers' Careers: Linking Professional Life to Professional Path." Educational Research Review 3 (1): 1-13.

Rinke, Carol R. 2009. "Finding Their Way On: Career Decision-Making Processes of Urban Science Teachers." Science Education 93 (6): 1096-1121.

Rinke, Carol R. 2013. "Teaching as Exploration? The Difficult Road out of the Classroom." Teaching and Teacher Education

Rinke, Carol R. 2014. Why Half the Teachers Leave the Classroom: Understanding Recruitment and Retention in Today's Schools. Lanham: Rowman & Littlefield Education.

Rinke, Carol R., and Lynnette Mawhinney. 2014. "Reconsidering Rapport with Urban Teachers: Negotiating Shifting Boundaries and Legitimizing Support." International Journal of Research & Method in Education 37 (1): 3-16.

Rinke, Carol R., and Lynnette Mawhinney. 2017. "Insights From Teacher Leavers: Push and Pull in Career Development." Teaching Education 28 (4): 360-376.

Rinke, Carol R., Lynnette Mawhinney, and Gloria Park. 2014. "The Apprenticeship of Observation in Career Contexts: a Typology for the Role of Modeling in Teachers' Career Paths." Teachers and Teaching: Theory and Practice 20 (1): 92–107.

Sadler, Georgia Robins, Hau-Chen Lee, Rod Seung-Hwan Lim, and Judith Fullerton. 2010. "Recruitment of Hard-to-Reach Population Subgroups via Adaptations of the Snowball Sampling Strategy." Nursing and Health Sciences 12: 369–374.

Schaefer, Lee, C. Aiden Downey, and D. Jean Clandinin. 2014. "Shifting From Stories to Live by to Stories to Leave By: Early Career Teacher Attrition." Teacher Education Quarterly 41 (1): 9–27.

Smethem, Lindsey. 2007. "Retention and Intention in Teaching Careers: Will the Next Generation Stay?" Teachers and Teaching: Theory and Practice 13 (5): 465-480.

Stake, R. E. 2005. "Qualitative Case Studies." In The Sage Handbook of Qualitative Research, 3rd Edition, edited by Norman K. Denzin and Yvonna S. Lincoln, 443–466. Thousand Oaks, CA: Sage Publications.

Tyack, David B. 1974. The One Best System: A History of American Urban Education. Cambridge, MA: Harvard University Press.

US Bureau of Labor Statistics. 2014. Labor Force Characteristics by Race and Ethnicity. 2015. Washington, DC.

Waters, Jaime. 2015. "Snowball Sampling: A Cautionary Tale Involving a Study of Older Drug Users." International Journal of Social Research Methodology 18 (4): 367–380.

You, Sukkyung, and Sharon Conley. 2015. "Workplace Predictors of Secondary School Teachers' Intentions to Leave: An Exploration of Career Stages." Educational Management Administration & Leadership 43 (4): 561-581.