

Qualitative Sampling Methods

A Primer for Technical Communicators

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Qualitative sampling methods have been largely ignored in technical communication texts, making this concept difficult to teach in graduate courses on research methods. Using concepts from qualitative health research, this article provides a primer on qualitative methods as an initial effort to fill this gap in the technical communication literature. Specifically, the authors attempt to clarify some of the current confusion over qualitative sampling terminology, explain what qualitative sampling methods are and why they need to be implemented, and offer examples of how to apply commonly used qualitative sampling methods.

Keywords: *research methods; sample selection; qualitative research; inter-disciplinarity*

Since at least the early 1990s, technical communication scholars have been calling for more rigorous research methods and more systematic approaches to research. Those who have written on the subject have suggested that attention to research methods is a necessary component of professionalization (Goubil-Gambrell, 1992; Porter & Coggin, 1995; Savage, 2003). They have also suggested techniques we can use to grant our research greater legitimacy among interdisciplinary audiences within the academy (Barton, 2001; Charney, 1996, 2001) and professional audiences beyond it (Campbell, 1999; Carliner, 1994; Hayhoe, 1997; Hughes & Hayhoe, 2007; Spilka, 2000).

Authors' Note: We thank the students in English 5389: Field Methods of Research in Technical Communication, spring 2007, at Texas Tech University, for their discussions that sparked the idea for this article. Also, the research that led to this article was supported in part by a seed grant from the West Texas Rural EXPORT Center at Texas Tech University–Health Sciences Center.

Curiously, however, despite all this attention to technical communication research, in a recent graduate course on research methods,¹ our class discussions and readings revealed one important subject that has been almost entirely overlooked in our field: appropriate sampling methods for qualitative research. As a result of this gap in our literature, students were turning to publications in other disciplines in order to learn more about qualitative sampling than what was included in the course readings. From the students' perspectives, the lack of a clear demarcation between qualitative and quantitative sampling in our own discipline, as well as the many different ways of describing qualitative sampling that they found in publications from other disciplines, made this subject confusing and overwhelming. To begin to allay this confusion and fill this gap in our field's literature on research methods, this article offers information that may help others involved in teaching and learning technical communication research methods. After briefly reviewing the literature to indicate the gap that we perceive in technical communication research and the pedagogical difficulties that ensue from this gap, we introduce qualitative sampling techniques and address some of the major questions students might have about applying these techniques.

The Qualitative Tradition in Technical Communication

A common tendency in technical communication texts on research methods is that the researchers limit their discussion of systematic sampling to quantitative studies and then state or imply that qualitative sampling is by nature unsystematic. One striking example is Charney (1996), who mentioned that the "routine reporting of sampling procedures" (p. 585) grants rigor and credibility to quantitative research. Specifically, Charney discussed two basic categories of sampling, stratified sampling and basic random sampling, that are typically used in quantitative research (p. 584). In contrast, she asserted, the same rigor of sampling methods will never be available in qualitative research: "Qualitative studies cannot avoid the difficulties of selecting research sites and participants" (p. 585). In elaborating this claim, Charney discussed two pitfalls that stem from this lack of rigorous qualitative sampling methods: First, "analyzing the discourse surrounding known breakthroughs . . . can lead to specious causal claims about the importance of specific textual features," and second, "picking a site opportunistically" can be problematic if the researcher "then treat[s] it as emblematic" (p. 585). We do not disagree that such pitfalls can be encountered in qualitative research, but Charney did not address whether there are any sampling techniques that

qualitative researchers could use to steer clear of such pitfalls. Although she identified techniques such as triangulation, cross-checking, and critical self-reflection that qualitative researchers have used to avoid these pitfalls, Charney did not specifically mention any qualitative sampling techniques other than “opportunistic” ones. When selecting a sample in qualitative research, then, according to Charney’s assertions, novice researchers might conclude that they have little choice but to use whatever material is available and, hence, little ability to control this aspect of the study.

Other publications about research methods since Charney’s (1996) provide similar advice about the lack of systematic sampling methods in qualitative research. Echoing Charney, researchers who offer advice on technical communication research often link systematic sampling methods to quantitative research. When discussing sampling methods for qualitative research, they either refer back to quantitative methods or echo Charney’s assertion that “qualitative studies cannot avoid the difficulties of selecting research sites and participants” and thus imply that the novice researcher does not need much specific guidance on this subject.

For instance, in Gurak and Lay’s (2002) edited collection on research methods, quantitative sampling issues are extensively discussed in the chapter on surveys (Murphy, 2002, pp. 97-101). But in the chapters that discuss qualitative research methods, sample selection receives little attention. And when the issue is addressed, it is not treated as a systematic process (e.g., Berkenkotter, 2002, pp. 55-56; Katz, 2002, pp. 24, 27-28). For instance, in discussing site selection for ethnographic study, Katz said this:

First, the researcher has to think of an appropriate site—a site where he or she can observe the kinds of behaviors relevant to the research questions—and then the researcher has to convince the organization to grant permission for the study. (p. 27)

Then when Katz described site selection for one of her own projects, she explained that because of permission issues, she was left “with a choice between two very different organizations,” so she “decided to use both of them to see whether the findings from one site were comparable to findings from the other” (p. 28). And in discussing sample selection for textual analysis, Berkenkotter (2002) provided several examples of previous studies, explaining how the researchers selected their samples. But she gave only the following general principle for sample selection in this type of research: “The advice I give to students beginning textual analysis projects is that it’s generally better to start small” (p. 56).

More recently, Hughes and Hayhoe (2007), in comparing quantitative and qualitative sampling, depicted the lack of representativeness of a qualitative sample as a trade-off that is necessary to achieve the rich depth of qualitative data. But they did not discuss systematic techniques for qualitative sampling and, as such, did not give readers a clear understanding of better and worse ways to select a qualitative sample. Instead, almost all of their discussions of systematic sampling techniques refer to quantitative methods.

And in another recent publication on research methods, Blakeslee and Fleischer (2007) included a discussion of sampling techniques in a section titled "Planning a Survey or Questionnaire." They mentioned five techniques in particular—typical case sampling, homogeneous sampling, deviant-case sampling, maximum-variation sampling, and convenience sampling (p. 148)—and explained how each technique might be used to select a survey sample. But when they discussed qualitative research techniques such as interviews, focus groups, ethnography, and textual analysis, they did not describe procedures for sampling systematically or provide terms to help novice researchers become familiar with qualitative sampling. For example, in chapter 3, "How Do I Find Answers?" although they offered general advice on obtaining permissions and getting access to a setting, they did not mention any specific techniques that qualitative researchers might use in selecting a sample.

This disparity in the coverage of quantitative versus qualitative sampling methods goes a long way toward explaining one of the pedagogical difficulties that arose in our research methods course: Although our field has many examples of excellent qualitative research, this research lacks a consistent vocabulary for sampling methods, so teaching or discussing effective qualitative sampling in a systematic way was difficult. In all of these excellent models of qualitative studies, the researchers take great care to describe their selection of sites and participants for their particular studies. For example, Haas and Witte (2001) stated the following: "This writing project was chosen for study precisely because of these complexities." They seemed to select their particular site because they deemed it typical: "Indeed, these complexities make the engineering standards document project fairly typical of technical communication projects in the contemporary workplaces we have studied" (p. 420).

In other cases, by contrast, researchers select their sample because it represents something atypical—an aspect about which little is known. For instance, Winsor (2006), who has collected a large body of data through interviewing and observing the same four engineers since 1989, described how she selected a sample from that data to analyze in one particular article. She emphasized that the longitudinal nature of her study made it

possible to isolate and closely analyze a particular moment at which all four of her study participants “were gradually moving into positions of greater responsibility and power in their workplaces” (p. 415), which made her sample particularly appropriate because data from such a situation had not previously been available for scrutiny: “Their move into positions of power constitutes a particularly interesting moment in their work lives, a moment about which we know little” (p. 415). In addition to making this claim about the selection of data from her larger longitudinal study, Winsor commented that the variation within this group also made it a useful sample. Although all four participants experienced a similar situation in that they had all recently been promoted or had received greater responsibility through other means, they had done so in “four different contexts” (p. 415), so she was able to draw useful comparisons between them.

Thus, the authors of research articles such as these carefully explained their own rationale for selecting a sample. But from a pedagogical perspective, their lack of a common vocabulary to describe their sampling decisions makes it difficult to draw connections or comparisons across studies. Our field has not yet developed a systematic, transferable vocabulary for discussing and evaluating the traits of appropriate qualitative samples that can help us to compare such studies to each other and, most important, to teach students how to select their own samples for qualitative research. For students in a research methods course, this lack of a systematic vocabulary for qualitative sampling may lead them to believe that there are no considerations when sampling for qualitative research, or at least cause them to be confused about what sampling method they should use when approaching qualitative research. That, in turn, may undermine the perceived validity of the already vulnerable novices’ research, and, in a worst-case scenario, even cause them to abandon qualitative research altogether.

A Primer on Qualitative Sampling Techniques

Although most of our field’s research-methods texts focus their advice on sample selection exclusively on quantitative research, a few texts in our field do offer guidance on sampling techniques that might be appropriate to qualitative research. In fact, MacNealy’s (1999) *Strategies for Empirical Research in Writing*, one of the books most widely used for graduate research-methods courses in technical communication and rhetoric and composition,² sparked our desire to learn more about qualitative sampling. In this section, we introduce qualitative sampling methods by summarizing what MacNealy and a few others in our field have said on the subject and

then showing how this emerging discussion can be supplemented by turning to qualitative health research.

MacNealy's (1999) discussion of sampling distinguished between "probability" and "non-probability" techniques, defining the latter as those that can be "used in circumstances where probability samples cannot be obtained or where levels of confidence are not that important" (p. 156). She mentioned and briefly defined three such nonprobability sampling techniques: purposeful, convenience, and snowball (pp. 155-157). She defined a *purposeful* sample as having "the characteristics . . . necessary to answer questions about a certain matter or product" (p. 157), a *convenience sample* as one that researchers acquire by going to public "locations and asking passers-by to participate" (p. 156), and a *snowball sample* as "the population of interest [that] cannot be identified other than by someone who knows that a certain person has the necessary experience or characteristics to be included" (p. 157).

Although these nonprobability techniques certainly sound like sampling methods that could be used in qualitative research, MacNealy (1999) never explicitly depicted them as such. In fact, this chapter on surveys, typically considered quantitative research, is the only place in which MacNealy explicitly discussed sampling techniques that might be appropriate to qualitative research. In the chapters devoted to qualitative research, MacNealy echoed many of the other texts in our field by failing to address sampling systematically. Although she distinguished between probability and non-probability techniques, she did not specifically look at the way sampling for quantitative research differs from that of qualitative research and how the two methods may create different sampling requirements. For instance, in a chapter on focus groups, she referred readers back to her discussion of random sampling in surveys without elaborating on how this sampling technique might need to be modified for qualitative research and without mentioning any other sampling techniques that might be better suited to qualitative research. Similarly, in a chapter on ethnography, MacNealy identified a few possible types of "sampling error," but she did not mention any specific sampling techniques that a researcher might use to guard against such errors.

Seeking to supplement MacNealy's (1999) discussion, we found two other texts in our field that more explicitly discuss sampling techniques appropriate to qualitative research. First, using a different terminology but describing techniques that might be considered variations on MacNealy's purposeful sampling, Campbell (1999) talked about maximum variation sampling, typical case sampling, and critical case sampling (pp. 541-542). Quoting Lindlof (1995), Campbell stated that in maximum variation

sampling, “cases are usually selected serially, with each adding a different, contrasting element to the overall sample.” In typical case sampling, by contrast, a researcher tries to identify the most typical case, which can be defined in various ways, “as the most frequent case, as the average of a distribution range, or as the composite ideal of a phenomenon.” Finally, in critical case sampling, the researcher selects “a case that exemplifies a theoretical or practical problem” (p. 542). Campbell’s terms and definitions are helpful, but her discussion is limited to a brief paragraph on each sampling technique. Furthermore, although such discussion is geared toward workplace professionals who need an introductory understanding of communication research, it does not elaborate enough to be useful for a graduate student embarking on a major research project, nor does it provide examples of how these sampling techniques might be applied in academic research.

Second, Barton (2001) used still another term—“theoretical sampling”—to describe a technique that sounds similar to those discussed by MacNealy (1999) and Campbell (1999). The theoretical sample is a “well-defined sample” (Barton, 2001, p. 324) “that is systematically aimed at representativeness” (p. 325) even though it is not generalizable in the same manner expected in quantitative sampling. She claimed that this technique improves on the “opportunistic design” that is more typical in our field (i.e., studying whatever materials or artifacts are readily available to the researcher). Of the discussions on qualitative sampling in technical communication research, Barton’s discussion of theoretical sampling is the most thorough and well-grounded. Still, though, this discussion is of limited use to the typical graduate student embarking on a major research project because it focuses only on one technique and does not specify how it might relate to the techniques discussed by MacNealy or Campbell.

Thus, technical communication researchers looking for advice on selecting a sample for qualitative research do have some resources available to them. But as these few examples reveal, current discussions of qualitative sampling techniques in our field are relatively brief in contrast to the attention devoted to other aspects of qualitative research. And those scholars who have discussed qualitative sampling used a variety of terms and expressions to describe the techniques they suggested even though these techniques seem to have important similarities. Because our field’s attention to qualitative sampling has so far been minimal, we have not sorted out which kind of sampling technique might be most appropriate in which type of study, and we have not agreed on a consistent terminology to describe sampling in qualitative research. In the rest of this article, we add to this emerging conversation in our field, starting with these ideas about qualitative sampling but

following Barton's (2001) suggestion that we tap into qualitative health care research in order to develop a more systematic vocabulary.

Turning to the literature in health care research, we see that it shares a concern about rigor and lack of generalizability that is evident in some of our field's major research. As health care researchers have observed, qualitative research that does not provide adequate description of sampling techniques renders questionable interpretation and replication of that research whereas a clear description of such techniques enhances qualitative research (Coyne, 1997; Higginbottom, 2004; Waitzkin, 1990). But health care researchers have paid more explicit attention to qualitative sampling than we have—in fact, a PubMed search on theoretical sampling, which is just one of the three main types of sampling we discuss, returned 97 citations. As a result of this scholarly attention, health care researchers have developed a more systematic vocabulary to address concerns about rigor in qualitative research.

Questions About Qualitative Sampling Techniques

In this section, we summarize what we learned about qualitative sampling from health care literature. We organize this summary around four questions that students in research-methods courses might find to be inadequately addressed in the technical communication literature: (1) What is qualitative sampling, and how does it differ from quantitative sampling? (2) What are the primary qualitative sampling techniques that I need to know? (3) How do I select a sampling technique? and (4) How do I know when I have collected enough data?

Question 1: What Is Qualitative Sampling, and How Does It Differ From Quantitative Sampling?

Qualitative researchers in health care have established more clearly than have scholars in our field that the nature of a good sample is different in qualitative research than it is in quantitative (Higginbottom, 2004; Mays & Pope, 2000; Waitzkin, 1990). Quantitative researchers usually try to minimize study bias by ensuring that their sample accurately reflects the larger population from which they drew it. Researchers identify different ways to minimize bias (Murphy, 2002), but despite these differences, the goals of minimizing bias and maximizing generalizability remain the same. Quantitative sampling techniques, therefore, are designed to accommodate these goals of minimizing bias and maximizing generalizability.

Rather than aiming to generalize about large populations, Giacomini and Cook (2000) suggested that the purpose of qualitative studies is to offer a “window-like” or a “mirror-like” view on the specific situation or phenomenon being studied (p. 480). Because minimizing bias and maximizing generalizability are not the primary goals of qualitative research, health care researchers have asserted, quantitative sampling techniques cannot be transferred directly to qualitative research (Higginbottom, 2004, p. 18). Depending on the situation being examined and the research question guiding that examination, qualitative researchers might have a variety of different goals in selecting a sample. In some cases, they might want to ensure that the sample exposes the differences within a population as much as possible. In other cases, they might want to examine carefully the behaviors of a cross-section of a larger population. Thus, rather than selecting a sample that will allow them to generalize to an entire population, qualitative researchers aim to minimize the chance that a study’s findings will be entirely idiosyncratic, that the findings will be completely different from what they might be at another site, with other subjects.

Despite these fundamental differences, qualitative and quantitative sampling techniques are not mutually exclusive and can sometimes be used together to develop a more suitable sample. For instance, using purposeful sampling (explained in the next subsection), researchers may establish a sample that is too large for their resources. They may then use random sampling, a quantitative technique, to determine a subsample that may be more within their means.

Question 2: What Are the Primary Qualitative Sampling Techniques That I Need to Know?

In response to the growing awareness that quantitative research and qualitative research demand different sampling methods (Higginbottom, 2004, p. 13), health care researchers in the last few decades have defined sampling techniques that are more appropriate to qualitative research. Although many different terms may describe qualitative sampling, most of these represent variations on the three major categories of sampling on which our discussion centers: convenience, purposeful, and theoretical. For each of these sampling techniques, we offer a definition, a discussion of the pitfalls that researchers should avoid in using the technique, and references to studies that apply the technique.

Convenience Sampling

Many qualitative researchers use convenience sampling, a technique sometimes called accidental (Burnard, 2004, p. 177; MacNealy, 1999, p. 156) or opportunistic (Barton, 2001) sampling. One health care researcher (Higginbottom, 2004) defined the *convenience sample* as consisting of “participants who are readily available and easy to contact” (p. 15). Although this definition emphasizes ready availability, some convenience samples are more readily accessible than others, so even if a sample is convenient, some amount of effort will likely be involved in reaching and recruiting participants from that sample. A closely related technique is snowball sampling, in which the researcher starts with a small sample of people who are readily available and easy to contact and then expands the sample by asking each participant to recommend other potential participants (p. 12).

Although convenience sampling is not adequate in every situation, it can provide an acceptable sample in many situations. The most important potential pitfall in using this technique is that because the subject matter or population being studied is likely to be quite familiar, the researcher might be tempted to generalize beyond this narrow population; a researcher using a convenience sample, then, should be especially careful not to overgeneralize. In addition, although convenience, or opportunistic, samples are widely used in technical communication research, in other disciplines such a sample is sometimes perceived as an important study limitation (Barton, 2001). Thus, if technical communication researchers anticipate an interdisciplinary audience for their study based on a convenience sample, they need to acknowledge that limitation. And although the convenience sample can be perceived as a study limitation, it can still turn up rich data. Paradoxically, the same close relationship between researcher and research site that makes a sample convenient often grants the researcher a level of access to and familiarity with the sample that guarantees a richness of data that could not be attained if the sample were less familiar, and therefore less convenient, to the researcher.

Paskiewicz (2001) and Graham, Ward, Munro, Snow, and Ellis (2006) use convenience samples in their qualitative health care studies. In an interview study, Paskiewicz (2001) drew a convenience sample of “15 low-income, African American teen mothers” (p. 34) from the pool of participants in a larger quantitative study of teen mothering practices. In a focus-group/interview study of teenage alcohol use, Graham et al. (2006) sent recruiting announcements to all of the schools in the region and, based on responses to these announcements, enlisted 28 parents of adolescent children. For an example of snowball sampling and a description of how it

was used in one study in our field that combines rhetorical analysis with ethnographic observations and interviews, students might refer to Britt's (2001) research-methods appendix.

Purposeful Sampling

Purposeful sampling means that the researcher is looking for participants who possess certain traits or qualities.³ In this sampling method, the researcher considers the aim of the research and selects samples accordingly (Coyne, 1997, p. 624). In purposeful sampling, the most important guiding principle is maximum variation; that is, researchers should seek to include people who represent the widest variety of perspectives possible within the range specified by their purpose (Higginbottom, 2004, p. 17). Along these lines, the most obvious pitfall in purposeful sampling would be to select a sample that is not diverse enough to represent the variation known to exist in the population or phenomenon being studied. For example, suppose we wanted to design a qualitative study to shed new light on the tensions that can exist between technical communicators and the subject-matter experts with whom they interact. A valid purposeful sample in this case would, at the least, have to include participants from both of these groups in order to draw conclusions about interactions or relationships between them. Going one step further, the sample should also include as much variation as possible within each of these two groups. Therefore, within each group we should try to recruit both management and nonmanagement employees with varying levels of education and experience.

An even worse pitfall of purposeful sampling would be for researchers to intentionally craft a sample to achieve the results that they want. In our example involving technical communicators and subject-matter experts, suppose we really wanted to overturn some of the existing beliefs in technical communication research about the tensions that can exist between technical communicators and subject-matter experts. If we intentionally located an organization where we knew beforehand that technical communicators and subject-matter experts had exceptionally smooth relationships, we would be misusing purposeful sampling techniques. To avoid this pitfall, we could opt to include participants from more than one organization and make sure that we were less familiar with some of these other organizations.

Another less obvious pitfall in purposeful sampling that occasionally occurs in students' efforts as well as in published research is when researchers describe their sampling method as purposeful but do not provide adequate detail about their purpose in selecting the sample. They should explicitly state their purpose in the research-methods section and carefully describe how they selected their sample in order to fulfill that purpose.

Whether or not researchers use this term to describe their sample selection, purposeful sampling is typically the technique employed in ethnographic research (Higginbottom, 2004, p. 11). Simmons (2002) and Hoddinott and Pill (1999) are examples of health care researchers who used purposeful sampling to recruit mothers in order to interview them about their experiences with infant feeding. These researchers used purposeful sampling in these two qualitative studies because in both cases they knew at the outset of the study that they wanted a sample that would represent a broad range of infant-feeding experiences. For examples of technical communication research that seem to use purposeful sampling without explicitly describing it as such, students might refer to two of the studies discussed earlier in this article: Haas and Witte's (2001) and Winsor's (2006).

Theoretical Sampling

In some instances, purposeful sampling could be confused with theoretical sampling (Tuckett, 2004, p. 53). But the health care literature is quite clear in delineating between these two sampling techniques (Coyne, 1997; Higginbottom, 2004). These two sampling techniques certainly resemble each other insofar as both involve a more clearly defined purpose than that involved in selecting a convenience sample. In purposeful sampling, however, the sampling criteria are developed in advance of the study, and the sample does not change throughout the study. In theoretical sampling, by contrast, the criteria for sampling emerge along with the study itself. Furthermore, theoretical sampling differs from purposeful sampling in that theoretical sampling is a basic tenet of grounded theory and thus should always be understood in that context (Coyne, 1997, p. 624). Grounded theory is based on the idea that the data provide the theory. The researcher identifies a situation or phenomenon that cannot be adequately explained by existing theories and then initiates a research project to glean data that will build and test a new theory. The researcher then adjusts the theory according to trends that appear in the data. In other words, in theoretical sampling, every time researchers start to see a trend emerging in the data, they purposely look for new data that will either call that trend into question or confirm it (Coyne, 1997; Strauss & Corbin, 1998). As researchers collect data using this method, they code and analyze the data in order to decide in which direction to take the sampling (Coyne, 1997, p. 625). They test and redefine their coding categories, choose further samples to refine these categories, and document the emerging sampling strategy as it unfolds (p. 626). Thus, theoretical sampling is sometimes referred to as an iterative process (Higginbottom, 2004, p. 13). To capture these important features of

theoretical sampling, Coyne (1997) suggested that a more accurate term for this sampling technique might be “analysis driven purposeful sampling” or “analysis governed purposeful sampling” (p. 629).

Because building the theoretical sample always involves a purposeful element, researchers using this technique obviously face the pitfalls that we mentioned in our discussion of purposeful sampling. Beyond those, another important pitfall of theoretical sampling would be for a researcher to use this technique without having an adequate understanding of grounded theory or to fail to document the sampling strategy as it unfolds. For a more complete discussion of theoretical sampling as it relates to grounded theory, students should consult major texts on grounded theory such as Glaser and Strauss’s (1967), Glaser’s (1992), Strauss and Corbin’s (1998), and Charmaz’s (2006). For an extensive discussion of the use of theoretical sampling techniques, see Tuckett’s (2004) study of the communication between nursing home residents and their caregivers. Tuckett provided an excellent model because he carefully documented how his theoretical sample developed and changed during the course of his study, starting with selecting a research site from 12 possible nursing homes and continuing through each phase of recruiting study participants from various locations within the site he selected.

Question 3: How Do I Select a Sampling Technique?

Deciding which qualitative sampling technique to use—convenience, purposeful, or theoretical—depends largely on the nature, research question, and scope of the study. Because convenience sampling simply means that the researcher is using a sample that is readily available, it could, in some sense, apply to almost any research project. Usually, though, the term will be used only if ready access was the researcher’s sole consideration in selecting a sample and if the researcher did not have an opportunity, at the outset of the research project, to select from several different research sites or populations. That would be the case, for instance, if students decided to conduct research at the on- or off-campus site where they worked part-time. If they did not work there, they might not have the same access to that particular research site. If they have other considerations besides convenience in selecting their sample, researchers typically use a more precise term such as purposeful sampling (Coyne, 1997, p. 624; Higginbottom, 2004, p. 13).

As we have suggested, purposeful sampling implies that researchers have some degree of choice in selecting their research sample and that they have a clear purpose that guides their choice. For instance, researchers who are affiliated with an academic program that has relationships with several

organizations that routinely allow researchers to conduct research at their worksites could employ purposeful sampling by selecting the organization(s) most closely aligned with their research question. Researchers whose research question focused on, say, intercultural issues could work with organizations that do a lot of international business, or those whose research question involved medical communication could work with organizations most relevant to that subject, and so on.

After selecting a research site, the researcher can also use purposeful sampling to select participants from that site. For instance, if a researcher wanted to conduct interviews as part of a study on how online support groups help depressive patients cope with their illness, the researcher would first select the online support groups from which to recruit participants and then seek to recruit interviewees who had used such support groups during their treatment for depression. Other criteria would likely come into play at this stage, and these would depend on the researcher's specific purpose and research question. For instance, maybe the researcher would want to select only people who had already finished treatment and were no longer using such support groups, interview only people currently involved in such support groups, or purposely select a blend of these two types. All of these pre-defined traits are part of the purpose that guides sample selection.

Finally, researchers' choice to use theoretical sampling is closely tied to their choice of a larger methodological framework. Typically, researchers should only describe their sampling methods as theoretical if they are using some version of grounded theory to guide the research. Theoretical sampling implies that the sampling strategy will be left open-ended at the outset of a study and allowed to unfold as the research progresses. Although this strategy might seem risky for a novice researcher, with the proper guidance and support from a knowledgeable advisor, it is feasible.

Question 4: How Do I Know When I Have Collected Enough Data?

In quantitative research, sample size is determined by statistical formulas that indicate the number of participants necessary to ensure that the research findings are generalizable to the total population studied. Because generalizability is not the goal in qualitative research, different standards determine when enough data has been collected. For the first two techniques, convenience and purposeful, a good general rule about sample size is that quality is more important than quantity. Because convenience sampling can vary so much from one research project to the next, it is hard to

make more specific recommendations about sample size for this technique. For purposeful sampling, as long as researchers recruit a sample that is diverse enough to fulfill their stated purpose, as we detailed in our discussion of this technique, the sample size can generally be considered adequate. Along these lines, a sample as small as two or three participants might turn up rich data if the researcher is able to interact with these participants in a number of different ways—perhaps through a series of interviews that take place at different points in these participants' lives or through a combination of interviews and ethnographic observations. That was certainly the case with the small sample of engineers who Winsor (2006) followed for several years through various stages of their professional lives. On the other hand, such a small sample size would be problematic if the researcher engaged in only limited interaction with this sample—for instance, researchers would have difficulty justifying their basing an entire study on a single interview with only two or three participants because arguing that only two or three people adequately represented the diversity in the target population would be nearly impossible.

Of course, sample size is often influenced, to some extent, by availability and by resources such as time and funding. For instance, in the hypothetical study of online support groups, the researcher might determine at the outset that recruiting at least 20 people for the study would be feasible based on the funding available to pay for costs such as transcription and on the time frame within which the researcher needs to complete the study. As long as the researcher has enough resources to support a sample large enough to guarantee the kind of quality needed to fulfill the purpose of the study, then the researcher can justify allowing the available resources to play a role in determining sample size. Choosing a sample size that is beyond their resources is a danger for all researchers, but especially for the novice researcher who may not understand the time and effort required to gather, process, and interpret data. Although this question of sample size might seem to be the least systematic part of qualitative sampling, even in quantitative research there is never a magically correct number that guarantees the effectiveness or legitimacy of a sample size. In fact, in large-scale studies, quantitative researchers often depend on statisticians to tell them how large their sample should be, and the question of which statistical formula is most appropriate for any given study leaves plenty of room for disagreement. Furthermore, even if everyone could agree on a magically correct sample size, researchers might not be able to actually achieve that sample size; time and funding constraints, as well as considerations such as study attrition, affect the sample size in quantitative research just as they do in qualitative research.

In theoretical sampling, researchers face the same constraints, but they are guided by the concept of *data saturation*—that is, when they no longer see new data appearing in the research, when the data being collected appears redundant. To reach the point of data saturation, researchers must continually analyze their collected data while still collecting more data (Tuckett, 2004, p. 49). In grounded theory, this concept is referred to as *theoretical saturation*, which occurs when researchers determine that all of their theoretical categories have become full enough to provide an adequate basis for generating a theory to explain the situation they are studying. Researchers achieve theoretical saturation when “no new emergent themes or concepts are generated” (Higginbottom, 2004, p. 10).

Conclusion

In any discipline informed by more than one research tradition, tensions will perhaps inevitably exist between the generalizable, replicable results that can be achieved from well-designed, large-scale quantitative studies and the more individualistic, in-depth results that come from well-designed qualitative studies. Sometimes in technical communication, this tension seems to be forgotten, or maybe subsumed, in our tendency to embrace methodological pluralism and our belief that such pluralism is one of our field’s strengths (Barton, 2000; Charney, 1996; Gurak & Lay, 2002; Johnson-Eilola & Selber, 2004). From time to time, though, even amidst this enthusiasm, researchers alert us to the tension between quantitative and qualitative research and urge us to take steps to overcome it. For instance, Charney (1996) has criticized our tendency to understand quantitative and qualitative methods in terms of “diametric opposition,” claiming that “it is more productive to view these methods as complementary or even as overlapping” (p. 582). Echoing Charney, Barton (2000) has stated that “the contact zone between methodologies should no longer remain a war zone, but become a resolution zone” (p. 405).

Interestingly, in the same article in which she encouraged a more complementary relationship between quantitative and qualitative research, Charney (1996) expressed one of the biggest stumbling blocks to establishing a more positive relationship between the two research approaches. Specifically, Charney characterized qualitative research as inherently subjective, and she invoked a stark contrast to the objective stance that can be achieved in a well-designed quantitative study. She went on to argue that the “objectivity” enabled by quantitative methods “facilitates public (as well as private) scrutiny of information and the methods used to collect it”

(p. 577). In short, if we take Charney's remarks seriously, then we need to develop frameworks for qualitative research that allow the kind of public scrutiny that is available to quantitative researchers. In this article, we have attempted to take a step in this direction by picking up on the efforts of those few researchers in our field who have begun to develop a vocabulary for sampling techniques in qualitative research (Barton, 2001; Campbell, 1999; MacNealy, 1999). Specifically, we have aimed to synthesize what technical communication researchers have said about qualitative sampling and then supplement it with material from other disciplines in order to give technical communication researchers a concise guide to sampling methods for qualitative research.

As a practical guide, we hope this article is useful to graduate students in technical communication. But in terms of the larger academic conversation, we also hope it might contribute to the goal Charney (1996) described, that quantitative and qualitative research should be seen as "complementary" or even "overlapping." We have not yet achieved this type of symbiotic relationship between the two. To achieve this truly symbiotic relationship, we would need an increased understanding of the methods through which rigor can be achieved in qualitative research. Especially now, as our field becomes increasingly interdisciplinary and more reliant on external funding, graduate students need to learn systematic techniques for qualitative sampling. The assumption underlying the treatment of qualitative sampling in many current technical communication texts seems to be that qualitative research can be interesting to readers in our own field but that it will never carry weight with larger audiences outside our field because its findings cannot be generalized in the same way that those of quantitative research can. We believe that this imbalance—an imbalance that seems to persist despite researchers' calls for complementarity between quantitative and qualitative approaches—is at the heart of the gap that exists in regard to qualitative sampling. As long as this imbalance between quantitative and qualitative research continues to exist, we cannot hope to achieve the kind of complementary relationship that Charney and Barton (2000) called for. We might even argue that with such an imbalance, we cannot truly achieve the methodological pluralism that others tout as a strength of our field.

Notes

1. The first author, Amy Koerber, was the instructor of the research methods course referred to here, Field Methods in Technical Communication Research. The second author,

Lonie McMichael, was a student in the class and also worked with Koerber as a research assistant during the same semester.

2. Rickly (2007) conducted a survey of instructors of graduate research-methods courses in technical communication and rhetoric and composition and found MacNealy's (1999) *Strategies for Empirical Research in Writing* to be one of the three most commonly used textbooks for such courses.

3. In the health care literature, scholars sometimes use slightly different terms such as *selective* or *purposive* to refer to what we are describing as purposeful sampling. Although Coyne (1997) delineated a subtle distinction between selective and purposeful sampling (p. 624), many other health care researchers use the two terms interchangeably. Since *purposeful* seems to be the most commonly used term, we have elected to use that term in our discussion and not to sidetrack readers with Coyne's (1997) distinction between purposeful and selective sampling. And the term *purposive* is just a minor grammatical variation from our preferred term, *purposeful*.

References

- Barton, E. (2000). More methodological matters: Against negative argumentation. *College Composition and Communication*, 51, 399-416.
- Barton, E. (2001). Design in observational research on the discourse of medicine: Toward disciplined interdisciplinarity. *Journal of Business and Technical Communication*, 15, 309-332.
- Berkenkotter, C. (2002). Analyzing everyday texts in organizational settings. In L. Gurak & M. M. Lay (Eds.), *Research in technical communication* (pp. 47-66). Westport, CT: Praeger.
- Blakeslee, A., & Fleischer, C. (2007). *Becoming a writing researcher*. Mahwah, NJ: Lawrence Erlbaum.
- Britt, E. C. (2001). *Conceiving normalcy: Rhetoric, law, and the double binds of infertility*. Tuscaloosa: University of Alabama Press.
- Burnard, P. (2004). Writing a qualitative research report. *Accident and Emergency Nursing*, 12, 176-181.
- Campbell, K. S. (1999). Qualitative research methods for solving workplace problems. *Technical Communication*, 46, 532-545.
- Carliner, S. (1994). A call to research. *Technical Communication*, 41, 615-619.
- Charmaz, K. C. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. New York: Sage.
- Charney, D. (1996). Empiricism is not a four-letter word. *College Composition and Communication*, 47, 567-593.
- Charney, D. (2001). Guest editor's introduction: Prospects for research in technical and scientific communication—Part 1. *Journal of Business and Technical Communication*, 15, 267-268.
- Coyne, I. T. (1997). Sampling in qualitative research. Purposeful and theoretical sampling: Merging or clear boundaries? *Journal of Advanced Nursing*, 26, 623-630.
- Giacomini, M. K., & Cook, D. J. (2000). Users' guides to the medical literature XXIII. Qualitative research in health care B: What are the results and how do they help me care for my patients? *Journal of the American Medical Association*, 284, 478-482.
- Glaser, B. (1992). *Basics of grounded theory analysis*. Mill Valley, CA: Sociology Press.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory*. Chicago: Aldine.

- Goubil-Gambrell, P. (1992). A practitioner's guide to research methods. *Technical Communication*, 39, 582-591.
- Graham, M. L., Ward, B., Munro, G., Snow, P., & Ellis, J. (2006). Rural parents, teenagers and alcohol: What are parents thinking? *Rural Remote Health*, 6(1), 383.
- Gurak, L., & Lay, M. M. (Eds.). (2002). *Research in technical communication*. Westport, CT: Praeger.
- Haas, C., & Witte, S. P. (2001). Writing as an embodied practice: The case of engineering standards. *Journal of Business and Technical Communication*, 15, 413-457.
- Hayhoe, G. (1997). What research do we need, and why should practitioners care? *Technical Communication*, 44, 19-21.
- Higginbottom, G. M. A. (2004). Sampling issues in qualitative research. *Nurse Researcher*, 12(1), 7-19.
- Hoddinott, P., & Pill, R. (1999). Qualitative study of decisions about infant feeding among women in east end of London. *British Medical Journal*, 318, 30-34.
- Hughes, M. A., & Hayhoe, G. F. (2007). *A research primer for technical communication*. New York: Lawrence Erlbaum.
- Johnson-Eilola, J., & Selber, S. A. (2004). *Central works in technical communication*. New York: Oxford University Press.
- Katz, S. M. (2002). Ethnographic research. In L. Gurak & M. M. Lay (Eds.), *Research in technical communication* (pp. 23-46). Westport, CT: Praeger.
- Lindlof, T. R. (1995). *Qualitative communication research methods: Vol. 3. Current communication: An advanced text series*. Thousand Oaks, CA: Sage.
- MacNealy, M. S. (1999). *Strategies for empirical research in writing*. New York: Addison Wesley Longman.
- Mays, N., & Pope, C. (2000). Assessing quality in qualitative research. *British Medical Journal*, 320, 50-52.
- Murphy, D. J. (2002). Surveys and questionnaires. In L. Gurak & M. M. Lay (Eds.), *Research in technical communication* (pp. 93-110). Westport, CT: Praeger.
- Paskiewicz, L. S. (2001). Pregnant adolescents and their mothers. A shared experience of teen mothering. *American Journal of Maternal Child Nursing*, 26(1), 33-38.
- Porter, L. R., & Coggin, W. (1995). *Research strategies in technical communication*. New York: John Wiley.
- PubMed [Data file]. Retrieved in 2007 from <http://www.ncbi.nlm.nih.gov/sites/entrez>
- Rickly, R. (2007). Messy contexts: Research as a rhetorical situation. In H. A. McKee & D. N. DeVoss (Eds.), *Digital writing research: Technologies, methodologies, and ethical issues* (pp. 377-398). Creskill, NJ: Hampton Press.
- Savage, G. J. (2003). The process and prospects for professionalizing technical communication. In T. Kynell-Hunt & G. J. Savage (Eds.), *Power and legitimacy in technical communication: Vol. 1. The historical and contemporary struggle for professional status* (pp. 137-168). Amityville, NY: Baywood.
- Simmons, V. (2002). Exploring inconsistent breastfeeding advice: 2. *British Journal of Midwifery*, 10, 616-619.
- Spilka, R. (2000). The issue of quality in professional documentation. *Technical Communication Quarterly*, 9, 207-220.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks: Sage.

- Tuckett, A. G. (2004). Qualitative research sampling: The very real complexities. *Nurse Researcher, 12*(1), 47-61.
- Waitzkin, H. (1990). On studying the discourse of medical encounters: A critique of quantitative and qualitative methods and a proposal for reasonable compromise. *Medical Care, 28*, 473-488.
- Winsor, D. (2006). Using writing to structure agency: An examination of engineers' practice. *Technical Communication Quarterly, 15*, 411-430.

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