

# **Chapter 3**

## **Methodology**

The investigation of tacit knowledge might well lend itself to an approach that allows this admittedly elusive concept to emerge from a particular milieu. Thus, the present study employs a grounded theory method (Glaser and Strauss, 1967; Strauss and Corbin, 1990). The term refers to the construction of a theory that is developed inductively from a corpus of data. This resulting theory should fit at least one dataset (i.e., one case) perfectly. Grounded theory contrasts with theories that are derived deductively (i.e., so called “grand theories” or traditional hypothesis creation), without the help of data, and which could therefore turn out to fit no data at all. While the notion of one solitary dataset fitting “perfectly” seems to fly in the face of scientific method (with its insistence on adequate sampling), it is a misreading to think that the one dataset would be an anomaly. The data from which such a theory might emerge are culled from a variety of subjects; the one best-fitting dataset or case simply provides the best explanation of the emergent theory. Because of what some would see as the “nebulous” nature of tacit knowledge (although I will address such a misreading later in this section), a combination of interviews and a grounded theory approach offers the potential of rich data and scientific rigor. A discussion of grounded theory and what it offers is, thus, warranted here.

Because of its interest in what are, at times, very singular datasets, we can suggest that grounded theory takes a case perspective rather than a variable perspective (although the distinction is often quite difficult to make in practice and is really more of interest to those investigating questions of grounded theory methodology). This means in part that the researcher takes different cases to be wholes, in which the variables interact as a unit to produce certain outcomes. The variables, thus, are seen as facets of each case and are only of interest in this fashion. A case-oriented perspective such as this tends to assume that variables interact in complex ways, and is suspicious of simple additive models such as ANOVA with main effects only. Key to this case orientation is

an interest in comparison. Cases with similar variables but different outcomes are compared to see where the key causal differences may lie. Similarly, cases that have the same outcome are examined to see which conditions they all have in common, thereby revealing necessary causes.

Thus, a grounded theory approach, particularly the way Glaser and Strauss initially conceived of it, consists of a set of steps whose careful execution is thought to "guarantee" a good theory as the outcome. Strauss would say that the quality of a theory can be evaluated by the process by which that theory is constructed, how skillfully the researcher can explain connections between variables. A more traditional hypothesis-driven approach (i.e., what we think of as "scientific" method) privileges the a priori quality of a particular theory even before any data is collected. In grounded theory emergent data are explored. According to Glaser and Corbin, the researcher seeks to understand the theory or explanations implicit in the data. Haig (1995) suggests that a good grounded theory is one that is: (1) inductively derived from data, (2) subjected to theoretical elaboration, and (3) judged adequate to its domain with respect to a number of evaluative criteria. As such, he argues, it has its own sense of rigor and is not at odds with scientific method. In fact, because grounded theory researchers are themselves concerned with questions of validity and reliability (as much as those researchers who use "quantitative" methods), grounded theory is indeed scientific method. Pandit's (1995) understanding of grounded theory is that it is composed of five increasingly recursive stages: a design phase, a data collection phase, a data ordering phase, an analysis phase, and a literature comparison phase. Each phase involves modifications to that phase's initial design and plan based upon what actually happens during that phase. More and more a mainstay of social science research, grounded theory has been used to investigate a number of different areas. Strauss and Corbin (1990), for example, conducted interviews of hospital patients involving pain management.

Important variables included the perception and alleviation of chronic or acute pain. Now, a more “scientific” or quantitative approach to studying pain management might take the format of Guzman (1999) in which chronic sufferers of low back pain were interviewed to see how often they sought treatment or missed work. Here, pain is viewed as a phenomenon (Bogan & Woodward 1989) that is relatively stable; either one is in pain or not. Similarly, one either misses work or goes. In a grounded theory approach, however, a skilled interviewer can explore various aspects of pain and their consequences. Because it is oriented according to individual cases, grounded theory begins with the assumption that pain might mean different things to different patients. Additionally, pain can be understood as having both intensity and duration. It also has consequences. When pain is of a certain duration or level, patients might cease certain activities and seek agents of pain relief. These agents themselves are quite varied. For some, drugs might provide relief. For others, exercise, rest, or physical therapy might be the answer. For still others, a combination might restore them to desired levels of activity or to lower-than-desired levels of activity. In grounded theory, interview data can give rise to a more nuanced understanding of the problem of pain than can a more traditional hypothesis-driven approach.

Additionally, while it is not part of the rhetorical “presentation” of grounded theory, *per se*, such research does seem to be based upon an “emic” understanding of events (Pike 1954). Simply put, these interpretations arise from the understanding that the research subjects themselves have of events in their lives. The subjects then are seen as the sole arbiters of what something “means.” An “etic” approach, on the other hand, privileges the researcher as the sole judge of an event. For ease of explanation, consider a phenomenon such as the discovery of ancient texts of a particular culture. Researchers employing an emic approach might well interrogate readers in that particular culture as to what insights they

might glean from the text itself. Those employing an etic approach might concern themselves with the events surrounding the discovery itself and / or how scholars assess the newly-discovered text in light of other known texts. In a nutshell, emic accounts are those that are meaningful to the research subjects themselves while etic interpretations involve categories (usually couched in the form of a hypothesis) that are most meaningful to the researchers.

Another consideration here involves the differences between phenomena and data. According to Bogan and Woodward (1988; 1989) phenomena are relatively stable, recurrent general features of the world that we seek to explain.” Phenomena include objects, states, processes and events, and other features. It is, therefore, more useful to characterize phenomena in terms of their role as the proper objects of explanation and prediction. Not only do phenomena give scientific explanations their point (without the detection of phenomena it would be difficult to know what to explain), they also, on account of their generality and stability, become the appropriate focus of scientific explanation (systematic explanation of more nebulous or ephemeral events would be extremely difficult, if not impossible). For example, we can study such phenomena as BTU output because the unit of measurement is universally held (and, thus, stable).

Data, by contrast, are idiosyncratic to particular investigative contexts. They are not as stable and general as phenomena. Indeed, data provide the way we understand certain phenomena that may not be perceptually accessible. The importance of data lies in the fact that they serve as evidence for the phenomena under investigation. In extracting phenomena from the data, we often engage in data reduction using statistical methods. Generally speaking, statistical methods are of direct help in the detection of phenomena, but not in the construction of explanatory theories. An example might include Likert-scale questionnaires or interviews that seek to measure attitudes regarding specific events. One’s attitudes or one’s ideology are relatively stable but often unobservable except in

specific contexts. The data generated by a questionnaire or interview help to provide evidence of the phenomena.

It is in the use of interview data as opposed to questionnaires or surveys that grounded theory appears to offer not only the possibility of dense and rich description of phenomena but also the opportunity for rigorous theory creation. Dunn and Swierczek (1977) argue that there is no more powerful combination of methods than that of interview and grounded theory as they allow a researcher to mine the “emic” aspects of data while pointing the way toward both theory creation and further research. Cutcliffe (2000) suggests that, in their search for conceptually dense theory, grounded theory researchers can free themselves from the constraints that limit their use of creativity and tacit knowledge. By adopting a deliberate “mindfulness” in the conduct of their interviews, researchers can actually generate more and better data by paradoxically “blurring and slipping” their methodology when it is appropriate. Additionally, while other forms of interviewing in qualitative research require that the researcher develop clinical skills in interviewing, grounded theory privileges the subject-matter knowledge that an interviewer brings to the research setting. It is far more important that the interviewer understand the subjects under discussion than it is for him or her to be a “skilled” interviewer. To understand what the subject says is far more helpful in instances of theory creation in more emic areas of knowledge.

Much of the research in tacit knowledge, however, seems to follow a more-or-less “scientific” and, thus, etic pattern. For example, in a study mentioned earlier in this book, Durrance (1998) studied the entries that technicians made to a relational database at Xerox Corporation. Implicit in the choice of her methodology is the assumption that tacit knowledge transfer obviously takes place via such a medium and, because of this, she limited her investigation to the entries compiled in that archive. Similarly, and again in a

study mentioned previously, Lawson and Lorenz (1998) assumed that tacit knowledge transfer takes place between firms within a particular industry and, thus, their study does not question whether or not transfer actually occurs nor explores the degree and types of transfer that may occur. Such studies, while valuable in the information they provide about knowledge transfer, employ methodologies that are somewhat inadequate for the present study. While the TOPIC/ICON system used in the FYC program at Texas Tech University employs a system that is arguably “automated,” Valenti, et al (2003) suggest that grading in such systems still features a high degree of subjectivity on the part of the instructor. At best, grading involves experiential and aesthetic components (arguably tacit components) that are well-nigh impossible to quantify but may be understood via dialogue with an instructor. Tacit grading knowledge is emic knowledge and, as such, requires a qualitative approach.

Ambrosini and Bowman (2001) suggest that research in tacit knowledge assumes that such knowledge does take place but is so difficult to measure that most researchers either avoid questioning its existence or simply avoid it as a topic of research. They suggest that techniques such as conceptual mapping and interviews would seem the most logical ones for “operationalizing” tacit knowledge. The present study, then, follows their suggestions for a very considered emic approach to the question and provides opportunities for a group of First-Year Composition instructors to “make meaning” of how they acquired their knowledge of grading. If grading involved the memorization of rote tasks, measurement would be easy. Because it is a complex matrix of knowledge, attitudes, and skills, however, great care must be exercised when attempting to study it. Such a study should allow instructors to consider how they acquired grading knowledge, should recognize that such knowledge is more suited to emic interpretations, and should involve the collection of rich and varied data to understand these complex behaviors. Also, because of the slow and deliberate

approach to data that grounded theory employs, this qualitative method might well be the most rigorous method for this potentially rich store of data. Indeed, here it might be helpful to consider the methodologies used in two other studies of grading in large Freshman Composition classes (mentioned in the previous chapter) to see what grounded theory can offer. Sweedler-Brown (1985) studied the effects of four hour training sessions on the holistic grading behaviors of a group of 26 instructors. Correlation coefficients and multiple regression analyses were performed on the scores that the trainers and instructors assigned the same sets of essays.

Sweedler-Brown found that “extensive” training seemed to result in greater inter-rater consistency and she suggested that these training sessions would allow inexperienced graders to assess the same factors that their more experienced counterparts did when grading freshman essays. While her study is impressive in its rigor, Sweedler-Brown makes several assumptions that may be unfounded. Hers is a “behaviorist” study. Instructors are exposed to training and output (consistency) is measured. We cannot, however, be certain that all instructors in the study are actually attending to the same aspects of the writing as the output measured here is simply the numbers on a holistic grading scale. Additionally, we cannot say with certainty whether it is training itself or simply practice and exposure that led to the significant inter-rater reliability she found. Follow-up interviews with her subjects might have allowed an emergent understanding of training to develop that could have either validated her explanation of training effects or allowed for a more nuanced understanding of its effects.

Similarly, Ramage and Bean (1990) discussed their experiences in administering large (i.e., 60 student) FYC classes at Montana State University. Here, student scores on an exit writing sample were used to support their contention that instructors can teach a large class as effectively as they can a much smaller one. However, the study, while fascinating, is little more than lore.

Lore is, of course, valuable in enhancing our understanding of a particular subject but, unlike grounded theory, is often not analyzed and does not offer the opportunity for dynamic theory-building that grounded theory does. Ramage and Bean do not provide statistics regarding performance of students in large classes versus that of their counterparts in smaller classes. Additionally, while they suggest the importance of training, very little information on the training they provided is offered. Words such as “effective,” similarly, are never defined. Unlike Sweedler-Brown’s study, Ramage and Bean do not offer a detailed explanation of the training their instructors received nor do they provide any explanation of how large class sizes affect that training. Here, too, interviews and observations of the actual instructors (and, perhaps, the freshmen in these 60-student classes) would have allowed a better assessment of “effectiveness” or allowed an alternative view of effectiveness. Arguably, while both Ramage and Bean’s and Sweedler-Brown’s studies provide interesting insights regarding the training of inexperienced instructors, both might have been strengthened through interviews and the opportunity for the instructors themselves to participate in an emergent understanding of grading knowledge and expertise.

The present study, then, attempted to allow instructors themselves to offer an understanding of how the transfer of grading knowledge occurs in a large FYC program. Twenty instructors volunteered to be subjects in the study. All the participants worked as classroom instructors (CIs) or document instructors (DIs) in the Texas Tech University FYC program. They were evenly split in their responsibilities between grading drafts in ENG 1301 (the beginner’s course) and ENG 1302 (a more advanced composition course that focuses on argumentation and persuasive writing). Grading responsibilities ranged from two hours per week to twenty hours per week. Eleven females and nine males comprised the sample with a mean age of 27.6 years. Previous teaching responsibilities varied widely. Four subjects had significant (i.e., over two years) teaching experience

before matriculation at Texas Tech, with two of those having had additional teaching experience in non-academic settings. Three subjects were newly-admitted (Fall 2005) students in the English MA program and, thus, had only one semester's experience grading drafts. Questions ranged from asking them exactly how they graded student work, how they believed they learned to do so, attitudes about their work, and a variety of other issues. All interviews were open-ended so as to allow each subject to express his or her views as they deemed appropriate. Additionally, following the analysis of the interview data from the graduate student instructors, I conducted four one-hour interview sessions with three tenure-track faculty members in the TTU English Department during which I asked similar questions about the transmission of grading knowledge. Two of these instructors had worked closely with the FYC administrators; one was an Associate Professor specializing in British literature, and one an Associate Professor teaching creative writing. All were involved in working with graduate students and in teaching writing intensive courses. Their responses were analyzed and coded in a manner similar to those of the graduate instructors (see below for a discussion of axial coding in grounded theory). The purpose of these faculty interviews was to determine how much of the graduate instructors' perceptions about knowledge transmission were the result of inexperience. Additionally, a director of FYC at a mid-sized land-grant university in South Texas and the former department chair (now at a university in Missouri) were interviewed. The FYC program at this particular South Texas university was traditional in its approach; individual instructors were responsible for grading and responding to the work of their students only. This interview was conducted to determine how much of the perceptions of the TTU sample were impacted by their teaching in a hybrid system and how much might be more-or-less universal (shared by instructors in many FYC programs).

All graduate student instructors were interviewed during one-hour sessions three times over the course of the Spring 2006 semester. As the primary researcher in this study, I conducted all the interviews and employed a “keyword” method of note-taking. While untrained in social science interview methods, my 5 years’ experience in Composition teaching allowed a good degree of familiarity with the subject matter and, as Cutcliffe (2000) noted, familiarity trumps clinical skill in the performance of grounded theory interviews. Extensive notes were recorded at each session. These notes were then analyzed via a system of coaxial coding (Strauss & Corbin 1990). Again, such a grounded theory approach refers to theory that is developed inductively from a corpus of data and involves an emic understanding of events that seeks to make implicit or tacit belief systems or knowledge more transparent. Unlike hypothesis testing which seeks to determine whether phenomena (including texts) fit predetermined categories, a grounded theory approach allows participants to exhibit or demonstrate what is meaningful to them regarding a particular subject. Here, the corpus of data included the participants’ own statements and assessments. After the data was collected, the interview transcripts were read by a team of three researchers. These additional researchers included two doctoral students in English and a doctoral candidate in Education. Chenail (1997) suggests the use of multiple researchers in grounded theory as their readings of data help to challenge the interpretations of the primary researcher and help to keep his or her attention on the emergent data and away from potential preconceived ideas about the data. The researchers then “coded” each of the responses on each transcript. The specific method of axial coding (Strauss & Corbin 1990) is a process of relating codes (categories and properties) to each other, via a combination of inductive and deductive thinking. Descriptions of the particular codes used in the present study along with examples included:

**Phenomenon:** This is what in schema theory might be called the name of the schema or frame. Here, the researchers gave a descriptive name to the subject matter of each statement in a particular transcript. For example, if a subject remarked that grading introductory drafts was especially difficult, the researchers might code this statement as “difficulty of specific drafts.”

**Causal conditions:** These are the events or variables that lead to the occurrence or development of the phenomenon. It is a set of causes and their properties. In the above example, a cause might be “unfamiliarity with draft criteria” if there is a statement in the transcript to indicate that this is what the participant stated.

**Intervening conditions:** These are mediating variables. At times there will be some overlap between these and causal variables. In our present example, these conditions might include “lack of time to learn criteria due to academic responsibilities.”

**Actions Taken / Features Used:** The purposeful, goal-oriented activities that agents perform in response to the phenomenon and intervening conditions. In our present example, a participant might indicate that he or she “takes more time to grade” or “uses online communication tools to ask peers for suggestions about grading drafts.”

**Consequences:** These are the consequences of the action strategies, intended and unintended. A consequence in our example might be “failure to grade requisite number of drafts.”

To ensure a high degree of validity each of the three researchers coded all the interview transcripts. In the case that two of the three researchers disagreed on the particular code assigned each coded phenomenon, that particular piece of data was removed from the corpus. Roughly, two-thirds of the data obtained from the interviews was removed but, this is a percentage expected in grounded theory

research (Strauss & Corbin 1990). From the remaining corpus of coded data, the researchers met to group the coded data into overarching categories or “themes.”

To recap the reasons, then, that this study employed an interview and grounded theory approach as opposed to a more deductive and hypothesis driven approach, they include the following:

(1) Because grading involves both skill and aesthetic (i.e., tacit or procedural) components, it can be conceived of then as an emic activity (i.e., one that calls for practitioners to make sense of what they do),

(2) As grading seems to involve emic knowledge, we should assume that it is composed of variables that interact in complex ways, variables that would not lend themselves to easy and accurate measurement by simple additive statistical models,

(3) Interviews allow the subjects to describe their own experiences in mastering grading behaviors, and finally,

(4) A method of constant comparison and multiple means of triangulation (three readers and some quantitative measures) seem to offer the best potential for understanding how instructors learn, disseminate, and, ultimately, create knowledge about grading.

Additionally, while the study’s focus is on the ways that instructors themselves perceive knowledge transfer taking place, questions regarding their understanding of knowledge per se and of barriers to knowledge transmission are also germane to this investigation.

