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How to Do Case Study Research

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CHAPTER 14
Teaching Research Methods in the Humanities and Social Sciences
How to do Case Study Research

Donna M. Zucker

Introduction

There are multiple definitions and understandings of the case study. According to Bromley (1990), it is a “systematic inquiry into an event or a set of related events which aims to describe and explain the phenomenon of interest” (p. 302). The unit of analysis can vary from an individual to a corporation. While there is utility in applying this method retrospectively, it is most often used prospectively. Data come largely from documentation, archival records, interviews, direct observations, participant observation and physical artifacts (Yin, 1994).

The terms “case study”, “case review” and “case report” are used loosely in the scientific and professional literature. The key features of a “case study” are its scientific credentials and its evidence base for professional applications. A “case review” might emphasize a critical reappraisal of a case. A “case report” might refer to a summary of a case or to the document reporting a case, as in case law or medicine. Case studies of individuals in health care research (to take one example) often involve in-depth interviews with participants and key informants, review of the medical records, observation, and excerpts from patients’ personal writings and diaries. Case studies in nursing, for example, have a practical function in that they can be immediately applicable to the participant’s diagnosis or treatment.

Case study as a research method is often indexed in most undergraduate research textbooks as neither quantitative nor qualitative. Little attention is paid to the usefulness of this method, with an average of two pages devoted to this research approach (Burns & Grove, 1999). This chapter will provide a step-by-step guide to this research method. The goal of this chapter is to translate this step-wise approach into a “curriculum” for teaching case study method.

In Preparation

Case study method is indexed in many introductory research textbooks and is often taught in qualitative research methods courses that discuss a variety of

methods. These may include grounded theory, phenomenology, discourse analysis and case study, for example. Reasonable goals for the learner would be to explore and understand the philosophical and aesthetic paradigms that are foundational to qualitative research methods, compare and contrast the distinctions among selected methods, evaluate traditional and emerging qualitative designs within their disciplinary area, and to apply methods and techniques. Using a step-wise approach students will learn how to design studies, generate data, analyze and interpret the data and disseminate findings. The teacher creates a teaching and learning environment to meet those outcomes.

Pedagogical approaches commonly blend learning and doing: these include seminar participation wherein students are responsible for researching and presenting a didactic lesson, discussing and critiquing qualitative research reports, engaging in field work activities, presenting findings to their class and writing a report. In most cases generating a proposal for the review of human subjects and obtaining university approval for the field experience is required.

Prior to Beginning

Students should form a list of possible methods in their mind when reviewing their research question, and ask how can I get the information I am looking for? There are many considerations prior to embarking on case study method but at the onset it should be clear that no other descriptive method is possible or will get the level of description the researcher is looking for, except case study method. Time in the field, lengthy interviews and transcription and analysis are all factors that should be thought out well in advance of engaging with participants.

In teaching case study method a primary aim is to define what case study is and what it is not. Various authors of case study methods discuss and demonstrate a variety of paradigmatic perspectives. I will discuss the most commonly cited perspectives. According to Yin (1994) the case study design must have five components: the research question(s), its propositions, its unit(s) of analysis, a determination of how the data are linked to the propositions and criteria to interpret the findings. Yin concluded that operationally defining the unit of analysis assists with replication and efforts at case comparison.

Stake (1995) emphasized that the number and type of case studies depends upon the purpose of the inquiry: an instrumental case study is used to provide insight into an issue; an intrinsic case study is undertaken to gain a deeper understanding of

the case; and the collective case study is the study of a number of cases in order to inquire into a particular phenomenon. Stake recognizes that there are many other types of case studies based on their specific purpose, such as the teaching case study or the biography. Feigin, Orum and Sjoberg (1991) state that irrespective of the purpose, unit of analysis, or design, rigour is a central concern. They suggest that, while proponents of multiple case studies may argue for replication, using more than one case may dilute the importance and meaning of the single case. Yin (1994) points out that case studies are the preferred strategy when “how” and “why” questions are posed.

Guba and Lincoln (1981) describe case study “types”. These types are factual, interpretative and evaluative. Each case study must outline the purpose, then depending on the type of case study and the actions proposed by the researcher, the researcher could determine the possible products of the study. For example, research undertaken to describe men’s experience in living with chronic coronary heart disease (CHD) could be placed in both factual and interpretative categories (Zucker, 2001). The researcher’s actions include recording, constructing and presenting, and producing a chronicle, a profile or facts. Additionally the researcher is construing, synthesizing and clarifying, and producing a history, meanings and understandings. A student’s understanding of such activities helps him/her form the stages of the case study method.

In summary the purposes of case study research may be exploratory, descriptive, interpretive and explanatory (Mariano, 1993). Articulating the purpose of the research will inform the remainder of the case study design.

Strategies

In order for students to develop some confidence and competence in learning case study method a variety of tools are made available for student examination, use and critique. Yin (1994) offers a very straightforward protocol approach for case study emphasizing field procedures, case study questions, and a guide for the final write up. This “tool” is intended to 1) assist the researcher carry out the case study and 2) increase reliability of the research. Similarly Stake (1995) has proposed a series of necessary steps for completing the case method, including posing research questions, gathering data, data analysis and interpretation. A remarkable distinction is Stake’s emphasis on a more naturalistic approach, the importance of the philosophical underpinnings of case method, and the importance of the description of

contexts. Developing a protocol will serve as a frame of operation and include all the necessary elements in the proper conduct of students' research. The following list illustrates a common case study protocol that guides the researcher's methodology:

- Purpose and rationale for case study
 - Significance of the phenomena of interest
 - Research questions
- Design based on the unit of analysis and research purpose
- Data collection and management techniques
 - Field methods
 - Transcribed notes and interviews
 - Mapping of major concepts
 - Building typologies
 - Member checking
- Describe the full case
- Focus the analysis built on themes linked to purpose and unit of analysis
- Analyze findings based on the purpose, rationale, and research questions
 - Case perspective
 - Disciplinary perspective
 - Cross-case comparison
 - Write up the case from an emic perspective
 - Biography, autobiography, narratives
- Establishing rigor
 - Credibility
 - Transferability
 - Dependability
 - Confirmability

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Sample

Another important component in teaching case study method is to emphasize unit of analysis and description of the sample. When the unit of analysis is an individual, for example, an important concept to consider is life history. Bromley

states, "The case study emphasizes the proximal causes of the behaviour and circumstances, where as life history emphasizes the remote origins, and the continuities and discontinuities in the organization of behavior over a relatively long period of time" (1991, p. 86). According to Stake (1995) the case study researcher may be somewhat of a biographer focused on a phase or segment of the life of an individual. Various reports in psychology (Bromley, 1986), sociology (Creswell, 1997; Yin, 1984, 1994), and education (Stake, 1978, 1995) have studied the individual as the unit of analysis, and have used the case study method to develop rich and comprehensive understandings about people. Yin (1994) describes single and multiple case designs. One rationale for these designs is to identify an extreme or unique case. The single case may focus on/employ a single unit of analysis or multiple units of analysis. This contrasts to multiple (comparative) case studies, which Yin describes as analogous to multiple experiments; they follow a "replication logic." The "logic" underlying the use of multiple-case studies is: each case must be selected so that it either 1) predicts similar results (*a literal replication*) or 2) produces contrasting results but for predictable reasons (*a theoretical replication*) (Lee, 2006).

Methods and Analysis: Iterative Processes

An important component of teaching case method is to allow students an opportunity to move in and out of the literature before, during and after the case study has begun. It is important for students to understand that method and analysis occur simultaneously in case study research. For the remainder of this discussion this example will focus the reader on the following three stages to illustrate this process:

Stage 1 - Describing Experience

Stage 2 - Describing Meaning

Stage 3 - Focus of the Analysis

Stage 1 - Describing Experience

In this stage the researcher creates interview questions prior to the first interview, which serve as a script for moving the interviewer closer to eliciting experience and meaning from participants in each succeeding interview. The questions should be broad and loosely structured, following the intent of the research questions. Using techniques suggested by Schatzman and Strauss (1973) journals and logs are kept to track methodological, observational and theoretical field notes during data collection.

Next, the interview questions are accompanied by a list of possible sources of data. Using the example of describing the experience of living with chronic CHD across 10 to 15 years, a list of potential sources was made that included the participant, his spouse, physicians, and nurses and other possible significant key informants. The medical records in at least three settings had to be located; hospital archives, doctors' offices and outpatient rehabilitation centres and clinics. The medical and nursing literature can be a rich source of information on patient experiences in the form of standards of practice, most of them in classic texts that are updated every one to three years. Additional standards were found in published discipline-specific guidelines. Because experience across time was an important feature of this study, the researcher had to be mindful of advances in cardiac interventions after 1985. Experts were consulted from nursing and medicine to validate the current standard of care.

Finally, the literature was reviewed for definitions of experience, particularly as they related to chronic CHD. For example, Strauss and colleagues (1984) and Miller (1992) referred to patients' illness experiences as their illness trajectory. Literature from the disciplines of nursing and medicine revealed a common trajectory for patients with CHD. The literature was revisited between interviews to gain a better understanding of new data. Clear conceptualizations assisted in taking definitions into the study, and combined with the other sources of data, comprised the mass of data available to study the phenomenon of interest. Thinking in metaphors, and creating simplistic models and thematic maps were essential activities in data management.

Mapping the data from multiple data sources is an important task. In this study, principal data were derived from two to three lengthy interviews lasting from two to two and one half hours. Assembling tables, charts and grids assisted with clustering of concepts. For example, after the first two interviews it became clear that acute cardiac experiences did not occur in isolation, rather three large dimensions of experience emerged. Experience was coded by colour in the transcripts; for example red for cardiac experiences, green for health and illness experiences, and blue for life experiences. Various perspectives were bolded (spouse) or underlined (nurse or doctor) to distinguish them from the patients' (normal typeface). Finally all of these data sources were read, summarized and organized. Interviews were transcribed by a professional transcriptionist. Early models such as the one seen in Figure 2 were

constructed to assist in conceptualizing dimensions and ideas that clustered together.

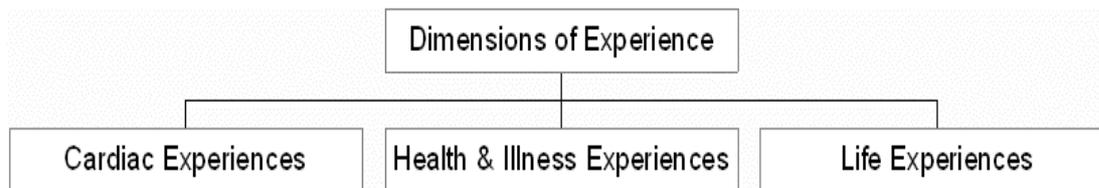


Figure 1. Mapping Experience

Experiences were further categorized as physiological, sociological and psychological within each dimension. Colour codes, taxonomies and chronological ordering were used to manage the data that were assembled in large tables first on newsprint, then in the word processor.

Stage 2 - Describing Meaning

In this stage the researcher consults the literature and links the research questions and methods to the philosophical framework. Because the meaning of experience was also central to this study, the literature on meaning that had the most relevance for this population was reviewed. Multiple perspectives were reviewed from social constructionism, medical sociology, existential analysis and symbolic interactionism. Processes similar to those used to explore and describe experience were used to study the importance of the concept of meaning. Burbank (1988) studied the meaning in life of older adults from a symbolic interaction perspective, and described a hierarchical model of meaning. The first level is labelled "meaning of signs and symbols" and represents a micro-level perspective on meaning. This level is considered a foundation or beginning of creating meaning. For patients with CHD this may refer to what they see and read in print or in the visual inspection of persons with known heart disease. Powerful words such as "CPR", "Chest pain" or "MI" are a few that convey meanings about absolute life and death.

The second level is "meaning of people, things and events in a person's life." This "mid level" of meaning builds on the first and assumes that "a variety of things may be meaningful in varying degrees to different people" (Burbank, 1988, p. 13). Meaning in life for patients with CHD may correspond to the crises or episodes of illness, significant others before, during or after the illness, and quality of life issues

which include work, intimacy and freedom to live according to one's own desires. Examples of events or treatments include angioplasty, stents and heart surgery.

The final level of meaning is an abstract, macro-level, labelled "the meaning of life as a whole." Individuals may have no conscious awareness of this level of meaning, but rather function within a set of values and beliefs about life's meaning. This existential or cosmic meaning differs from the query, "what is the meaning of my own life" which reflects one's need to have purpose in living. The latter may assist the patient with CHD to plan for the future given his current physical and psychological circumstances. Burbank equates "meaning of life" as a whole, as interrelated to the other two levels and is seen as one's worldview. In conclusion these levels of meaning may encompass humankind's capacity to find importance in the experiences of living.

In the study of CHD patients' experiences, the midlevel of meaning was most helpful due to the preponderance of participants' events and situations noted in the transcripts, archives and medical records, as well as interactions with others and self. Burbank's model was not fully supported in this study, as there were periods when no meaning could be found in either of the cases. Again the use of a simple model assists in pulling together data from the case study and tying it to meaning making. In this instance support from existential analysis was helpful. See Figure 3 for a basic model of meaning based on Burbank's work.

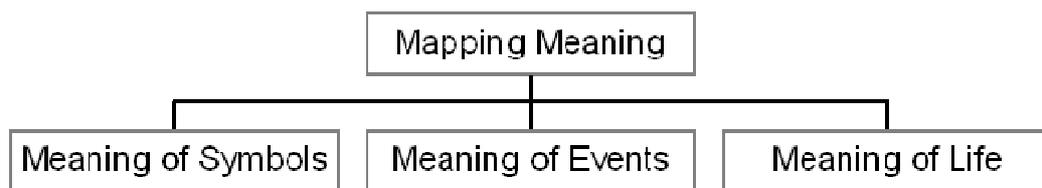


Figure 2. Mapping Meaning (Based on Burbank, 1988)

Interestingly, in the case study of the experience and meaning of men living with chronic CHD, two cases emerged that differed widely, one being the more "textbook" case, the other the more idiosyncratic. Rather than following a traditional approach to case analysis using replication logic (Yin, 1994), efforts were focused on drawing comparisons between the two cases. Prior to analyzing instances of meaning from these cases, the original transcripts were once again reviewed and marked with a small "m" for each instance of meaning. Particular words, sentences,

and passages were noted in a separate journal. Interpretations of what patients were thinking, doing and feeling added to an understanding of the meaning of their experiences. This experience of reading and rereading, refining the methodology as data is received as an important set of activities in case study research.

Stage 3 - Focus of the Analysis

Generalization of case study findings is limited to the case itself or types of cases. However, attention to selected details enhances the analysis and increases clarity of reasoning. Some general techniques are mentioned that have been useful in focusing the analysis of the example used here. According to Yin (1994) analysis hinges on linking the data to the propositions and explicating the criteria by which findings are to be interpreted. While generalization limits the use of case study method by some social scientists, Yin (1984) argues that theoretical generalization is to the domain of case study what statistical generalization is to the true experiment. An important technique used to incorporate rigour into the study design is the use of the negative case to serve as a study "control". The use of the extreme case, the deviant case, and the normal case are helpful for making points of comparison.

The stand taken by Stake (1978) focuses on context-specific or "naturalistic" generalization. Such an approach resonates with readers' tacit knowledge, which helps people make connections and associations without the benefit of words. It is believed that people have the capacity for this kind of knowledge, and from it they build understandings.

In the example of the experience and meaning of men with chronic CHD, major themes identified with the use of maps and typologies emerged as focal areas of the analysis. The metaphor "journey" became a central organizing concept, and was linked to a variety of sub-concepts, and relationships among them were sought. Two complete cases were reviewed. Each case was analyzed separately with an eye toward describing experience and meaning. According to Feigin, Orum and Sjoberg's (1991) description, one appeared as a "normal" case and one an "extreme" case. The strategy was to focus the analysis on the journey, by concentrating on how it: 1) was tied to a physiologic state, 2) carried consequences and 3) compared with the typical health/illness trajectory.

Examining Rigour

It is the role of the case study researcher to test and confirm his/her findings in order to indicate the findings are valid and the procedures are rigorous. Rigour is

built into this process by focusing the strategies used to generate meaning from the qualitative data. See Table 2 for these strategies. Those strategies in italics were selected for the example case study.

Table 1. Strategies Used to Generate Meaning (Miles & Huberman, 1994)

| | |
|---|--|
| <p>What Goes with What? <i>Noting Patterns</i> <i>Clustering</i> Seeing Plausibility</p> | <p>Integration Among Diverse Pieces of Data <i>Making Metaphors</i></p> |
| <p>What's There? Counting</p> | <p>Sharpen our Understanding <i>Making Comparisons</i> Partitioning Variables</p> |
| <p>See Things and Their Relationships More Abstractly Subsuming Particulars Into the General Factoring <i>Noting Relations Between Variables</i> Finding Intervening Variables</p> | <p>Assemble a Coherent Understanding of the Data <i>Building a Logical Chain of Evidence</i> <i>Making Conceptual/Theoretical</i> <i>Coherence</i></p> |

Investigators within a constructivist paradigm, such as that used by case study research, attempt to reconstruct participants' understanding of the social world (Denzin & Lincoln, 2000). Thus, traditional criteria of internal and external validity are replaced by such terms as trustworthiness and authenticity. Guba and Lincoln (1981) suggest an alternate view of establishing rigour based on a critical realist paradigm that is juxtaposed to a more traditional view. In this case reliability is contrasted with dependability or auditability. In this sense we are asking if the researcher's processes were consistent and reasonably stable over time and across researchers and methods. Internal validity can be contrasted with credibility or authenticity. Here we aim to answer the questions, do the findings of the study make sense? Are they credible to the people we study themselves or others? Finally we want to know if our conclusions are transferable to other contexts? How far can they be generalized? Here we contrast external validity to transferability or fittingness (Miles & Huberman, 1994).

Quality standards for case studies in psychology, for example, have been developed emphasizing the scientific and professional benefits to other disciplines. Fishman (1999) describes such standards, outlining quality of knowledge issues across three paradigms: the positivist model, the pragmatic model and the hermeneutic model. Procedural guidelines for fulfilling these criteria rely heavily on methodological arguments and techniques - sampling diversity, triangulation or agreement, and monitoring bias. Lincoln (1995) argues that quality also involves ethics. The researcher's decision whether to embark upon the research must be considered in relation to the risk of harm to participants or their families. Using an outside auditor is required to check each step as the case study is developing. Thus attention to quality control must be incorporated into the case study protocol.

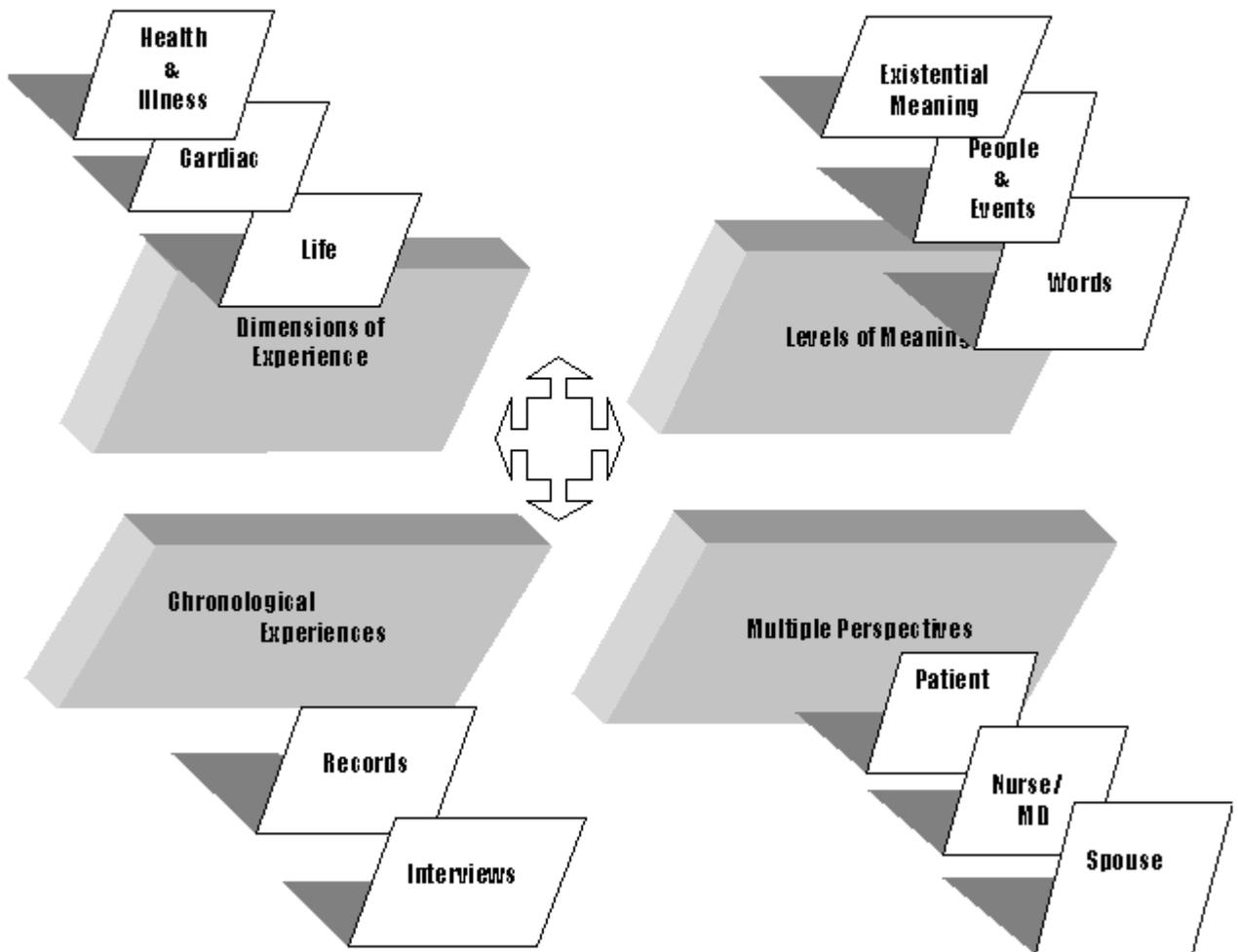
Writing Up the Case

There are some suggestions new case study researchers may find useful prior to writing up their findings. The first is to spend some time at the outset reading "good" case studies. Course assignments should include adequate time and support for students to complete pilot studies and practice writing, both excellent ways to develop the "artistic" expertise required of such writing. Other strategies include joining a writing group, participating in writing retreats and soliciting English or literature experts to begin reading one's writing. Decisions about writing style will become clearer as the intent of one's audience is determined. For example a narrative, biographical or autobiographical approach may be useful for dramatic effect, while a full description may be well suited to an organization. In any event, the goal is to tell the story and its findings clearly separated from conclusions or interpretations.

In the example of the experience and meaning of men living with chronic CHD, the writing began with a review of the stages of analysis. The first stage defined the typical trajectory and mapped the cases' experiences. Definitions came from the literature, experience, and nursing practice. Patient interviews and other sources of information revealed three phases of experiences common to patients with CHD. Exploration of interview data and medical records uncovered three dimensions of experience and three categories of experience that could be viewed within each dimension. This analytic stage also ordered the data chronologically and placed them within the frame of reference of the data source.

The second stage of analysis focused on mapping meaning. Here theoretical support came from a model based on the symbolic interaction perspective. This model assisted in mapping the meaning demonstrated in the transcripts across the three phases of the trajectory and across the levels of meaning. The third stage focused the analysis on three important notions: how experience was tied to a physiologic state, how it carried consequences, and how it compared with the typical illness trajectory. Both case studies included in-depth descriptions of individuals whose adult lives had been significantly impacted by CHD. Physiological processes, while central to experience, were only a portion of that experience. This level of analysis assisted in bringing together the notions of experience and meaning as seen within the context of life. Putting all the pieces together helped create a beginning model that informed the trajectory of living with chronic CHD. This process assisted in developing a logical chain of factors contributing to the understanding of the data. The result was a series of maps and typologies representing perspectives about the meaning of experience, from all data sources. A beginning model emerged describing the trajectory of chronic coronary heart disease (See Figure 3).

Figure 3. Proposed Trajectory of Chronic Coronary Heart Disease



The “style” of the manuscript in this case was biographical using a chronological flow. Participants’ own language was used whenever possible throughout the manuscript in an effort to retain the integrity of their stories and meanings.

Conclusion

Case study method can be a creative alternative to traditional approaches to description (quantitative descriptive and descriptive correlational descriptive designs) emphasizing the participant’s perspective as central to the process. In the example used here the value of the case study was the findings. Theoretical implications informed nursing practice directly. Case study conclusions created opportunities for nurses to adapt their model of care to incorporate all three phases of the chronic illness trajectory. For example, changes in history taking and follow up as well as

ongoing provision of support to the patient and family were emphasized. At the organizational level such findings require resources and administrative action for implementing a transitional model of care. Other implications, no less important, include the impact of the method itself on moving description of a phenomenon to intervention. Finally the utility of a case study is that it encourages educators to consider additional steps in a caring educational curriculum that emphasizes communication and relationships between human beings (Scott, 2005).

References

- Bromley, D. B. (1986). *The case-study method in psychology and related-disciplines*. Chichester: John Wiley & Sons.
- Bromley, D. B. (1990). Academic contributions to psychological counselling: I. A philosophy of science for the study of individual cases. *Counselling Psychology Quarterly*, 3(3), 299-307.
- Bromley, D. B. (1991). Academic contributions to psychological counselling. 2. Discourse analysis and the formulation of case-reports. *Counselling Psychology Quarterly*, 4(1), 75-89.
- Burbank, P. (1988). *Meaning in life among older adults*. Unpublished doctoral dissertation. Boston University, Boston.
- Burns, N. & Grove, S.K. (1999). *Understanding nursing research*. Philadelphia: W.B. Saunders Company.
- Creswell, J. W. (1997). *Qualitative inquiry and research designs: Choosing among five traditions*. Thousand Oaks, CA: Sage.
- Denzin, N.K. & Lincoln, Y.S. (Eds.) (2000). *The handbook of qualitative research*. Thousand Oaks, CA: Sage Publications, Ltd.
- Feigin, J. R., Orum, A. M., & Sjoberg, G. (1991). *A case for case study*. Chapel Hill: The University of North Carolina Press.
- Fishman, D. B. (1999). *The case for pragmatic psychology*. New York: New York University Press.
- Guba, E. G., & Lincoln, Y. S. (1981). *Effective evaluation*. San Francisco, CA: Jossey-Bass Publishers.
- Lee, W.S. (2006) *Software Evaluation Research: Case Study Methodology Designed Research*. University of North Carolina at Charlotte, Department of Software and Information Systems. Last viewed June 16, 2006 at www.sis.uncc.edu/~seoklee/Projects/CSM.htm
- Lincoln, Y. S. (1995). Emerging criteria for quality in qualitative and interpretive inquiry. *Qualitative Inquiry*, 1, 275-289.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage Publications.

- Mariano, C. (2000). Case study: the method. Chapter 10. In P. Munhall & C. Oiler Boyd, Eds. *Nursing Research. A Qualitative Perspective* (2nd ed.) (pp. 311-337). Sudbury, MA: Jones and Bartlett Publishers.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Miller, J. F. (1992). *Coping with chronic illness. Overcoming powerlessness* (2nd ed.). Philadelphia: F.A. Davis.
- Schatzman, L., & Strauss, A. L. (1973). *Field research: Strategies for a natural sociology*. Upper Saddle River, NJ: Prentice-Hall, Inc.
- Scott, D. (2005). An interview with David K. Scott. *Spirituality in Higher Education*, 2(2). Last viewed February 25, 2006 at <http://spirituality.ucla.edu/newsletter/past/Volume%202/6/1.html>
- Stake, R. E. (1978). The case study method in social inquiry. *Educational Researcher*, 7(2), 5-8.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications.
- Yin, R. K. (1984). *Case study research: Design and methods* (1st ed.). Beverly Hills, CA: Sage Publications.
- Yin, R. K. (1993). *Applications of case study research*. Newbury Park, CA: Sage Publications.
- Yin, R. K. (1994). *Case study research: Design and methods* (2nd ed.). Newbury Park, CA: Sage Publications.
- Zucker, D. M. (2001). Using case study methodology in nursing research. *The Qualitative Report*, 6(2), Last reviewed June 21, 2006, <http://www.nova.edu/ssss/QR/QR6-2/zucker.html>