# CHAPTER 3

## Procedures

Qualitative research was defined as "any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification" (Strauss & Corbin, 1990, p. 17). A qualitative design was chosen for this research study. Specifically, a grounded theory study as described by Creswell (1994, 1998), which was an emergent design was used, which allowed the examination of existing theories, on-going data collection and analysis, and use of verbal and visual data. According to Atkinson and Hammersley (1994), qualitative social research starts with unstructured data, and through data analysis interprets meaning in verbal form to achieve a rich, in-depth understanding of people or a phenomena.

Assumptions and Rationale for Qualitative Design

Assumptions associated with qualitative research were distinct from a quantitative mode of inquiry. They were

1. Qualitative researchers are concerned primarily with *process*, rather than outcomes of products.

2. Qualitative researchers are interested in *meaning*-how people makes sense of their lives, experiences, and their structures of the world.

3. The qualitative researcher is the *primary instrument* for data collection analysis. Data are mediated through this human instrument, rather than through inventories, questionnaires, or machines.

4. Qualitative research involves *fieldwork*. The researcher physically goes to the people, setting, site, or institution to observe or record behavior in its natural setting.

5. Qualitative research is *descriptive* in that a researcher is interested in process, meaning an understanding gained through words or pictures.

6. The process of qualitative research is *inductive* in that the researcher builds abstractions, concepts, hypotheses, and theories from details. (Merriam, 1988, pp. 19-20)

Morse (1991) stated the following characteristics of a qualitative research problem:

(a) The concept is "immature" due to a conspicuous lack of theory and previous research; (b) a notion that the available theory may be inaccurate, inappropriate, incorrect, or biased; (c) a need exists to explore and describe the phenomena and to develop theory; or (d) the nature of the phenomenon may not be suited to quantitative measures. (as cited in Creswell, 1994, p. 146)

The exploratory nature of the research question was well suited to the qualitative design and the assumptions associated with a qualitative approach.

The goals of this research study were best accomplished by use of a qualitative research design approach. A procedure that was planned and systematic was needed, but flexibility was also needed to explore the literature on systems theory and the social psychology theories used in CT. This inductive methodology promoted the discovery of theory through an emergent design. The ability to discover concepts of individual systems, human systems, and the nature of their interactions with other complex systems was essential to develop a theoretical model grounded in the findings of the study.

Type of Design

The design of this study was a qualitative approach based on grounded theory principles. The grounded theory approach was defined as "a qualitative research *method* that uses *a systematic* set of *procedures* to *develop* an inductively derived grounded *theory* about a *phenomenon*" (Strauss & Corbin, 1990, p. 21). In grounded theory research design, a researcher began with broad research questions that provided the freedom and flexibility to explore a phenomenon in depth. The research questions identified the general focus for the study and tended to be action and process-oriented (Leedy, 1997, p. 163). Then, an inductive mode of thinking was used to define new theories.

Creswell (1994) explained how to use this inductive mode of thinking to build a new theory. The steps were (a) researcher gathers information, (b) researcher asks questions, (c) researcher forms categories, (d) researcher looks for patterns (theories), and

(e) researcher develops a theory or compares pattern with other theories. The development of a theory was the culminating aspect of a study. The theory was grounded in the data (Strauss & Corbin, 1990).

Glaser and Strauss (1967) suggested that in a grounded theory study several characteristics should be present. The characteristics were (a) a substantive theory should emerge from the data, (b) the researcher should use a systematic approach with specific steps for data analysis, (c) the researcher delimits the theory and the categories are saturated, and, (d) the researcher needs to recognize that the primary outcome of this type of study is a theory with specific parts. Categories were considered saturated when new data did not give any further insight into the concept and additional research continued to reveal the same concepts. The parts of a theory were an idea, concepts, and the relationship between concepts (statements) (Reynolds, 1971).

This study focused on theory building and the development of a new theoretical model, using a grounded theory approach. Examples of this type of research in the field of CT were Regan (1997), Scheller and Kunz (1998), and Kang (1999). The purpose of Kang's study was to develop a conceptual model from secondary data in the literature and a practical model from interviews with professionals in industry. These two models were then integrated to develop an assortment-planning model for women's wear retail buyers. Scheller and Kunz used a grounded theory approach to explore definitional ambiguity of apparel product quality from the apparel producer's perspective. Quality in a garment represented value, which was dependent on three properties acquired during its production. Regan researched the design process used by industry to "(a) determine applicability of engineering design process theory to apparel design, (b) interpret actions and decisions made during the apparel design process, and (c) determine whether the specific stages of engineering design process theory were used by designers and merchandisers" (p. 36).

In a similar study in resource management, McFall (1998) analyzed models found in the family financial management literature and integrated the findings with other systems theory concepts to develop a Personal Resource Systems Management (PRSM)

model. The model focused on "the quality of daily living, shaping personal well-being, societal satisfaction and overall quality of life" (McFall, p. ii). The PRSM model was evaluated by the Liebert and Spiegler (1990) framework, which was also used to evaluate the historical resource management models. The Liebert and Spiegler framework allowed an examination of the new model and an evaluation of its credibility and utility. The studies of Kang (1999), McFall, and Regan (1997) provide validity for using these research methods for theory development. Kang, McFall, and Regan have served as guides to this study's research design.

<u>Sample Selection</u>

*Theoretical sampling* was used for this study. This was

…the process of data collection for generating theory whereby the analyst jointly collects, codes, and analyzes his [her] data and decides what data to collect next and where to find them, in order to develop his [her] theory as it emerges….controlled by the emerging theory,… (Glaser & Strauss, 1967, p. 45)

With theoretical sampling, the researcher examined a sample that could "contribute to the evolving theory" (Creswell, 1998, p. 118). The general subject, current theoretical models of systems theory, the theories used in the field of CT, and the purpose of the study to form the new theoretical framework guided the initial sampling. Theories were explored that helped the researcher to meet the purpose of this study. The emerging theory determined the subsequent data collection that was guided by the criteria of theoretical purpose and relevance.

Theories could be represented in several forms, including textually and visually in models. Theories from two areas, outside and inside the field of CT, were examined to explore a broad base of social science theory pertaining to human systems. Theories found from the systems theory perspective included general system theory, cybernetics, constructivism, social constructionism, and dynamic systems theory. Applicable theories in the field of CT found in commonly used textbooks and research studies were cognitive theory, symbolic interaction, cultural theory (Kaiser, 1990), and the human ecological theory (Bubolz & Sontag, 1988; Pederson, 1982; Sontag, 1979). Qualitative research

methods allowed for flexibility in sample selection; therefore, as data collection and analysis were conducted, additional theories could be added to the study (Marshall & Rossman, 1995).

Criteria used in the selection of systems theories to analyze for the proposed study were that the theories pertained to human phenomena, were found along an objective-subjective continuum, and had a historical scope. First, systems theories were selected that pertain to the social sciences, dealing with human phenomena. Second, theories were chosen to present a wide coverage along the objective-subjective continuum. Morgan and Smircich (1980) discussed a range of positions along the objective-subjective continuum relating to the assumptions about ontology, epistemology, and human nature in research methods in social science. The systems theories chosen fall along different points on the continuum—general system theory (open systems theory) toward the objective end of the range, then cybernetics and constructionism, dynamic systems theory, and then social constructionism toward the subjective end. Third, the theories have a historical scope. General system theory originated the concept in the 1920s, with cybernetics developing very soon thereafter. Constructivism and social constructionism were conceived in the 1980s, influencing the current dynamic systems theory found in the fields of developmental psychology and human development. These theories provided a broad base of past and current concepts within the systems perspective to compare and contrast with past and current theories in the field of CT.

In a review of the literature inside the field of CT, several theories used by researchers to examine human issues were found. The theories were symbolic interaction, cognitive theory, and cultural theory discussed by Kaiser (1990), and a human ecological model (Bubolz & Sontag, 1988; Pederson, 1982). These theories represented a historical scope with symbolic interaction at the beginning in the mid-1960s, cultural theory in the 1960s and 1970s, and cognitive theory in the 1970s. Much of the current research in this discipline used one of these theories as a framework for the study (Kaiser). The human ecology theory in CT originated in the 1970s, and was a systems model found within CT, but has had limited usage (Bubolz & Sontag).

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In grounded theory studies it was common for 20 to 30 interviews to be conducted in order to saturate the categories, meaning to begin to find the same thing (Creswell, 1998). An example was when from one source a category had been identified, and subsequent sources supported the category, but added no new information. Regan (1997) used 70, one-hour interviews and Kang (1999) used 10, three-hour interviews, with follow-up interviews. McFall (1998) evaluated 27 theoretical models from the discipline of financial management. In this study there was a use of multiple data sources. Data on many theories inside and outside the field of CT were gathered from multiple literature sources. These data sources were used instead of interviews. Literary documents were primary sources of what researchers publish as their *official stance* on theory. If the document sources were refereed, the data also reflected what the field recognized and used in research and practice. These document sources were accessible, and the researcher conducting a qualitative study could easily return to the field during the data collection/analysis stage of the research.

<u>Role of the Researcher</u>

The researcher's role in this study was as the primary collector and interpreter of the data. My worldview tends to be a holistic perspective, seeing humans as beings with biological, psychological, emotional, and spiritual dimensions. The interplay of the human system with the natural systems of the world, along with the man-made systems of society and cultures, is the interaction, which presents problems to be solved. My background and experience in the arts, education, human development, and the field of CT provide a unique lens through which this study was conducted.

My longtime interest in human development issues is evident in many ways. I received a BA in music education and taught cognitive and creative development through music for 20 years, teaching students ages four through adult. As a parent of two children, now young adults, I was provided with a real life learning experience of human development and learning. My job was to encourage their love of learning, the development of creativity, and growth as individuals. Because of extended family experiences with cancer, the questioning of life and its meaning was experienced and

answers were sought through individual study and a Hospice training program. I have done several years of volunteer work with CARING Cancer Ministry. The goal of CARING's work was to provide emotional and spiritual support to cancer patients and their families. The experiences of family members with cancer and the volunteer work with CARING provided insight into the need to live one day at a time and the importance of using optimal experiences as a hope for life.

My awareness of the systems perspective began 20 years ago with my husband's work as a social worker. The social work field recognizes the need to view an individual as a system and as part of a system (family unit) that interacts with many other systems (Zastrow, 1989). This perspective was always important to his work. In my husband's search for a Ph.D. program, finding one with a systems theory perspective was ultimately important. His work has been an influence to my thinking.

I received a master's degree in apparel design at Virginia Tech through the Department of Near Environments. My research was conducted on the topic of creativity as it relates to the design process. Creativity focuses on the idea of possibilities and the optimal development of people. My course work for the Ph.D. has been focused on human development and learning in Family and Child Development and CT. Classes have given me formal education on these subjects through the Department of Family and Child Development, the Department of Teaching and Learning, and the Department of Near Environments. My role is as an educator, encouraging optimal development in people and the prevention of human problems. This combination of experience, interest, and education is unique in the field of CT.

The broad nature of this study's research questions required a qualitative approach to explore the theories and models used in the past and present in order to develop a theoretical model to be used in the future. As a researcher, I have experience in qualitative research through taking graduate course work and conducting a thesis study using the qualitative method of interviews, participant observations, and document analysis. This experience in qualitative methods and education in human development gave me the integration of skills necessary to apply these concepts to the field of CT. My

past experiences and present worldview contributes to my ability to address the issues in this project and to my researcher biases in conducting this research study. These biases created but also affected the outcome of the study, and the interpretation of the data was subjective.

Data Collection and Analysis

"Qualitative data analysis is a search for general statements about relationships among categories of data; it builds grounded theory" (Marshall & Rossman, 1995, p. 111). The purpose of data collection and analysis in this study was to generate a theoretical framework using a construct oriented, or categorical approach. This design was based on Creswell's (1994, 1998) discussion of a grounded theory study design. Data analysis in qualitative studies was "the process of bringing order, structure, and meaning to the mass of collected data. It is a messy, ambiguous, time consuming, creative, and fascinating process. It does not proceed in a linear fashion; it is not neat" (Marshall & Rossman, p. 111).

In this study, theoretical models from inside the field of CT and the systems theory perspective outside the field were explored. Domains of the information were formed as they were identified from the data. Domains included ideas, concepts, and the relationships of the concepts (statements) found in the theories. Domains identified in the data were coded and compared. A zigzag process style of data collection and analysis was used. In this style, data was collected in the field (i.e., library/document materials), then analyzed, back to the field for more data collection, and then back to analysis, et cetera. This process continued until the categories became saturated and the theory was elaborated in all its complexity. Next, the domains and data within domains were systematically reassembled, and related in the form of a theory—idea, concepts, and statements (Creswell, 1998). Through this process, the findings were used to develop a new theoretical framework and model. The specific data collection and analysis methods that were used for this study is described in the following sections.

Data collection. Data collection was conducted from mid-June to mid-August of this year (1999). The main data source was documentary materials on the theories of the

systems perspective outside the field of CT and social psychological theories used inside the field. Glaser (1968) discussed the use of documentary materials as primary data, stating that it could be as valuable for generating theory as the observations and interviews usually used in qualitative, sociological studies. A library search of the literature was conducted to find these documentary materials. Computer databases, such as Clothing and Textiles Arts CD-ROM, Dissertation Abstracts Online, and Article First, were searched for systems theory studies and texts, using keywords previously found during the literature review. Also, the researcher browsed the stacks for additional journals with related content, other books, and relevant documents. The same procedure was used for symbolic interaction, cognitive, cultural, and human ecology theories found in the field of CT.  Possible sources included refereed journals, books, dissertations, and conference proceedings.

Data pertaining to the ideas, concepts, and the relationships of concepts (statements) of each theory were written on index cards, to organize the data collection and to aid in the data analysis. A protocol suggested by Creswell (1994) for recording information for documents was to identify (a) information about the document and (b) key categories that the researcher was looking for in the source, noting whether the information was primary or secondary material. Another source of data was the researcher's journal, a record of memos and thoughts pertaining to the research process and analysis of the data as they were being collected.

Data analysis. Content analysis was made according to the *constant comparative* method. This was the process of taking information from data collection and comparing it to the domains that were identified when looking at the ideas, concepts, and statements (relationships of the concepts) of each theory (Creswell, 1998). Domains that were identified were coded. Leedy (1997) defined content analysis as "the continual process of comparing data segments and data codes within and across categories" (p. 164). This comparison was guided by the study's research questions. A method of using color-coding and card sorting was utilized to aid analysis and to synthesize the findings (see

Appendix A). In grounded theory, coding was composed of three types: open coding, axial coding, and selective coding.

*Open coding* was the "process of breaking down, examining, comparing, conceptualizing, and categorizing data" (Strauss & Corbin, 1990, p. 61). Creswell (1998) described this as "a procedure for developing categories of information" (p. 150). This coding was done by reading and examining the text for "salient categories of information supported by the text" (Strauss & Corbin, p. 150). These categories pertained to the theories' ideas, concepts, and statements based on the research questions. The researcher continued the reiterative process of data collection and analysis to saturate the categories. This was a process of "looking for instances that represent the category and to continue looking…until the new information obtained does not further provide insight into the category" (Strauss & Corbin, p. 151). Tesch (1990) suggested eight steps to use as a guide to coding data: (a) Read through all of the data carefully, jotting down ideas as they come to mind; (b) pick one document and ask, What is this about? What is its underlying meaning? writing thoughts in the margin; (c) after doing this for several documents, make a list of all topics, cluster similar topics, and form them into columns that might be grouped as major topics, unique topics, and leftovers; (d) take this list and go back to the data, abbreviating the topics as codes, writing the codes next to the corresponding segments in the data, trying out the preliminary organizing scheme to check for emerging categories/domains and codes; (e) make a final decision on the abbreviations and alphabetize these codes; (f) assemble the data material belonging to each category, or domain, together and perform a preliminary analysis; and, (g) recode the existing data if necessary.

In this study, open coding was done in a manner similar to Tesch (1990). The data (text and models) were recorded on the index cards, keywords representing the concepts that were identified were written on the top corner of the index cards, and a comparison was made of the data of each theory. This was done for each theory being researched. Open coding helped reduce the data into a small set of domains that were components of the theoretical models that were being explored. In qualitative analysis several activities

were done *simultaneously*--data analysis, data collection, data interpretation, and narrative reporting (Creswell, 1998)--in order for the researcher to work inductively from the data to identify the domains and categories found in the literature. This also provided an opportunity for the researcher to process the data with a constant-comparative method that guided the next selection of sampling.

*Axial coding* was a "set of procedures whereby data are put back together in new ways after open coding by making connections between categories" (Strauss & Corbin, 1990, p. 96) or by "interconnecting the categories" (Creswell, 1998, p. 150). In this study, axial coding was done by sorting and resorting the cards in different ways to discover groupings among the categories or domains. Color stripes added to the top of the cards were used to signify groupings of categories. Axial coding aided in making a model by identifying the category groupings or domains that formed concepts in the model.

*Selective coding* was "the process of selecting the core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development" (Strauss & Corbin, 1990, p. 116). Connections were made between categories in axial coding, then in selective coding, a selection was made of domains. The domains were used to integrate the findings of the study. "…It is necessary to explicate the *story line* (the core category) through which all other categories are related. These relationships are then validated against the data and further developed and/or refined as needed" (Leedy, 1997, p. 164). Selective coding helped identify the relationships of the concepts and resulted in statements to be used in developing the new theoretical model.

 Theory formation. A goal of the study was to identify the commonalties of the theories. Charts were made during the coding of the data in order to aid the peer-checkers in verifying the data analysis and the researcher in the development of a new model (see Appendix B). From the analysis of the findings, a new theoretical framework was developed, according to grounded theory methods (Creswell, 1998). The parts of the theoretical framework were the ideas, the concepts of those ideas, and statements that are the relationships between the concepts. The parts of the new theoretical framework were

identified and derived from the data. The developed statements made up the new theoretical framework and were described textually and in a visual model.

Theoretical framework illustration. The study could have ended at this point because generation of a theory is a legitimate outcome of grounded theory research (Creswell, 1998), but this study continued in order to illustrate the model's usefulness to the field of CT.  Illustration of the theoretical framework was appropriate to the purpose of the research study and a way to evaluate its usefulness. A discussion of the issue of body image and the eating behaviors/disorders of women was used to illustrate the usefulness of the new theoretical framework, and to assist the researcher in verbalizing the theory and refining the connectivity of concepts in the model. The developed visual theoretical model was used in the discussion of this complex problem and its implications for future research. Conclusions and implications of the theoretical framework were discussed for the social psychology area of the field of CT. Also, the study ended by relating and discussing the theoretical framework in regard to the literature. "A final section discusses the relationship of the theory to other existing knowledge and the implications of the theory for future research and practice" (Creswell, p. 179).

Verification

Verification was important to qualitative studies to establish credibility, trustworthiness, and authenticity (Creswell, 1998; Lincoln & Guba, 1985). Eisner (1991) suggested exchanging the words, credibility, transferability, dependability, and confirmability for internal validity, external validity, reliability, and objectivity, traditionally used in quantitative studies. Credibility demonstrated that the study was conducted to identify and describe the subject accurately. Transferability was the applicability of one set of findings to another context. Dependability was the accounting of the changing conditions of a study and in the design because of an increased understanding of a research setting. Confirmability was whether the findings of a study can be confirmed, or verified, by another (Marshall & Rossman, 1995). The quality of research is important in a qualitative study in order to give an accurate account of the

phenomena being studied. The goal of qualitative research was to find hypotheses, theories, and questions to further explore (Creswell, 1996; Merriam, 1998).

For data collection, a triangulation of data sources was used to provide credibility, transferability, and dependability. Data were gathered from multiple authors and sources, including reference books, research articles from professional journals, collegiate texts, magazines, and novels. CT research was published in multiple forums, within and outside the major CT area with editors and reviewers not from CT. Materials were examined from the field of CT as well as many other disciplines including economics, education developmental psychology, family therapy, human development, science, and sociology. Data collection methods included documentation and journaling by the researcher. An auditor examined the process and assessed accuracy, providing dependability and confirmability. This person is a professor in the field of CT, holds a doctoral degree, and is experienced in qualitative research methods. The auditor evaluated the review of literature and the examination of the data sources.

Peer checking to verify the concepts found in the analysis of the data was conducted by two peer-checkers, providing credibility, transferability, and confirmability. A professional colleague, with a Ph.D. in Marriage and Family Therapy, trained in systems theory, checked the analysis of the systems theoretical models. A colleague in the field of CT, a Ph.D. candidate with experience in qualitative research methods and the social psychology area of CT, reviewed the analysis of the theoretical models from the field of CT. This process was also audited.

The researcher evaluated the developed theoretical framework of this study, using criteria set by Strauss and Corbin (1990) and Lieber and Steigel (1971, 1990). Strauss and Corbin in their discussion of qualitative research, stated that a "well-constructed grounded theory will meet four central criteria for judging the applicability of theory to a phenomenon: **fit**, **understanding**, **generality**, and **control**" (p. 23). *Fit* was whether the theory was "faithful to the everyday reality of the substantive area and carefully induced from diverse data" (Strauss & Corbin, p. 23). *Understanding* was whether the theory was comprehensible and makes sense to those that may have been studied and/or those who

are professionals in that area. *Generality* was whether the theory was abstract enough with sufficient variation to apply to "a variety of contexts related to that phenomenon" (Strauss & Corbin, p. 23). Generality was dependent on the data on which the theory was based and whether it was comprehensive and its interpretations were "conceptual and broad" (Strauss & Corbin, p. 23). The last criterion was *control*. "The theory should provide control with regard to action toward the phenomenon" (Strauss & Corbin, p. 23). This was accomplished by the hypotheses that proposed the relationships between the concepts that were derived from the data related to the phenomenon, later guiding the action (Strauss & Corbin).

The work of Lieber and Stiegal (1971, 1990) has been used for twenty years. Their text is in its sixth edition and provides a reliable organizational framework in the study of personality. It has been updated to reflect the current research in the field of psychology. Lieber and Stiegal stated one major issue a psychological approach must address was a clear theoretical statement. A framework for evaluating theory was adapted from Leiber and Stiegal by listing the 14 components of four sections that composed the framework and was used by McFall (1998) to evaluate 27 models found in the literature of the financial management field. The framework for evaluating theory and theoretical models was developed to help clarify theoretical statements (McFall) and provided credibility and dependability as verification of this study.

The Lieber and Stiegal framework was composed of 14 components in four sections. The sections were (a) the *purposes of theory,* (How well did the model serve the purposes of science?); (b) the *credibility of a theory,* (A theory was not proved or disproved, but merely supported. At the same time lack of supporting evidence did *not* refute a theory. A theory was tested many times and if it failed to receive support, a researcher must revise it or form a new theory.); (c) the *utility of the theory*, (How useful was the theory?); and (d) *theoretical development*, (How could the model be improved or further developed?).

The Lieber and Stiegal (1990) framework was designed to evaluate how well a developed model met the following criteria. The components for evaluation of the theory were

Purposes of theory

1. *Organizes* and clarifies observations,

2. *Explains* the causes of past events so that future events can be predicted from the same causes,

3. *Provides* a sense of understanding of the subject matter, and

4. *Generates* new ideas and research.

Credibility of a Theory

5. *Elements are supported* by empirical research.

6. *Elements require* further research.

Utility of the theory

7. *Parsimony* of the model. Parsimony in theories was "when everything else is equal, theories that involve simpler explanations and fewer assumptions are better…" (Lieber & Stiegal, 1990, p. 9) Though Reynolds (1971) suggested complexity of human problems make this a challenge, it was still desirable.

8. *Extensiveness* of the model. Extensiveness was the comprehensiveness of a theory, referring to "the breadth of the phenomena that the theory can deal with" (Lieber & Stiegal, 1990, p. 9). A comprehensive theory included important phenomena and the problems that would be able to be addressed.

9. *Internal consistency* of the model. Internal consistency was "the degree that its propositions and assumptions are consistent and fit together in a coherent, larger explanation" (Lieber & Stiegal, 1990, p. 9). There would be no internal contradictions and the parts would interrelate.

10. *Testability* of the model. Testability was "how well and how easily a theory can be supported." (Lieber & Stiegal, 1990, p. 10). When a theory's concepts were clear and distinct, precise and unambiguous hypotheses would easily be derived from the theory.

11. *Usefulness* of the model. Usefulness of a theory depended on its practical application to problems in research. "Preparation for practice" (Lieber & Stiegal, 1990, p. 10).

12. *Appropriateness* of the model to the time. Acceptability was to "be known and taken seriously by others" (Lieber & Stiegal, 1990, p. 10). There must be some recognition of its worth for scientists to test it in research and the public to tolerate and fund the research using it.

<u>Theoretical development</u>

13. *Suggested improvements* to the model.

14. *Other comments*.

The four criteria of Strauss and Corbin (1990) and the Lieber and Stiegal (1990) framework originated from different research paradigms, but were complimentary. According to Creswell (1994), the same attributes (i. e., the interrelated set of constructs) of theory are as desirable in a qualitative study as a quantitative one. The approaches of Strauss and Corbin and of Leiber and Stiegal contained the same basic questions for a researcher. Because of this, the two evaluation frameworks discussed above were integrated and used to evaluate the new theoretical framework developed by this grounded theory research.

An exception to the similarity was Leiber and Stiegal's criterion that a purpose of theory was to explain the causes of the past events in order to predict future events from the same causes. According to the qualitative approach of Strauss and Corbin, predictability was not stated as a purpose of theory. Instead, they stated that well-constructed grounded theory would provide conceptual and broad interpretations and control with regard to later action toward the phenomena. Leiber and Stiegal used the term predictability, whereas Strauss and Corbin used the terms of interpretations and control. The goal of this theoretical framework was to explain the phenomena as it was identified in the data through interpretations that provided a perspective for guiding the action toward the phenomena in the future. Another exception to the similarity between the two approaches of evaluation was the ideas of parsimony. Lieber and Stiegel stated

that parsimony was one criterion for the utility of the theory. Strauss and Corbin asked if the theory was faithful to the everyday reality of the subject area and carefully induced from diverse data. Valsiner (1998) stated that "If we consider psychological phenomena simultaneously being structured at different levels of organization, the old principle of parsimony—which has legitimized atomistic reductionism—becomes problematic" (p. 216). The criterion of parsimony was not used for the evaluation of the developed theoretical framework and model due to the holistic perspective used in the research design and the complex nature of the phenomena that was the focus of this research.

The criteria based on the approaches of Strauss and Corbin (1990) and Leiber and Stiegal (1971, 1990) used to evaluate the theoretical framework and model that was developed in this study were the following questions:

1. Are the theoretical framework and model understandable and do they serve the purposes of theory—that is, does it organize and clarify observations, explain the phenomena as it was identified in the data, provide understanding of the subject matter, and generate new ideas and research?

2. Are the theoretical framework and model credible, and do they provide control with regard to action toward the phenomena being studied?

3. Are the theoretical framework and model useful, and are they abstract enough to apply to a variety of contexts related to the phenomena that is studied?

4. How can the theoretical framework and model be improved or further developed?

Summary

A qualitative approach, using a grounded study research design, was used to explore the research questions of the study. This research study examined the theories that were used by the field of Clothing and Textiles and systems theories from outside the field. A new theoretical framework was developed to address the dynamic, complex human nature and its interrelation with other systems, to be used in the field of CT.

Over the past two centuries a *separation* has occurred between science and art, resulting in a reductionistic view of the world and humans as machines. Humans and the

world in which they live are not simple systems, but complex ones. A *balance* of objective and subjective thinking and an appreciation for different ways of acquiring knowledge should help to regain a holistic perspective of the world and humankind. A *balance* of these two paradigms, science and art, would allow researchers to address the complexity found in the interactions of interrelated systems, improving their ability to solve human problems specific to the field of CT, and to improve the quality of all our lives.