Exploring Complex Phenomena: Grounded Theory in Student Affairs Research

Scott C. Brown Richard A. Stevens, Jr. Peter F. Troiano Mary Kay Schneider

As more sophisticated questions are raised about the learning students achieve on college campuses, educators must design more sophisticated research studies to answer them. This article provides an introduction to grounded theory, a powerful qualitative research method that can increase educators’ understanding of the complex student experience.

Understanding the undergraduate student experience is of utmost importance to many educators (Upcraft & Schuh, 1996). However, as more sophisticated questions are raised about student learning, student development, and student identity on college campuses, more sophisticated research studies must be designed to answer these questions. Student affairs practitioners in their component subspecialties are uniquely positioned to make significant contributions to this endeavor because of their connections to college students.

Although the contributions of quantitative studies to the research literature have been significant, more researchers are employing qualitative methods to get a better understanding of the complex interactions between the student and the college environment (Attinais, 1992; Baird, 1996). Quantitative and qualitative modes of inquiry have different purposes (generalizability and prediction vs. contextualization and interpretation), approach (experimental and deductive vs. inductive and naturalistic) and rely on different researcher roles (detachment and impartiality vs. personal involvement and empathic understanding) (Garland & Grace, 1993). Because many aspects of the college experience do not divide neatly into discrete variables, qualitative methods of inquiry are the best suited for understanding the complex phenomena that come together to form the college experience (Gall, Borg, & Gall, 1996; Garland & Grace; Marshall & Rossman, 1995; Patton, 1990). Qualitative methodology is useful in exploring and describing the experiences of college students, especially when little is known about the phenomenon under study. A qualitative approach yields results that cannot be gathered using quantitative methods. Although qualitative research means different things to different people, it generally refers to research that leads to understanding people’s lives, stories, behaviors, or is about organizational functioning, social movements, or interactional relationships (Strauss & Corbin, 1990).

The grounded theory approach uses a “systematic set of procedures to develop an inductively derived grounded theory about a phenomenon” (Strauss & Corbin, 1990, p. 24). The procedures are based on the “systematic generating of theory from data, that is systematically obtained from social research, and offers a rigorous, orderly guide to theory development that at each stage is closely integrated with a methodology of

Scott C. Brown is Director of the Career Development Center and Adjunct Lecturer of Psychology and Education at Mount Holyoke College. Richard A. Stevens, Jr. is Director of Residence Life and Education at Northeastern University. Peter F. Troiano is Assistant Dean of Students and Adjunct Faculty Member at Mitchell College. Mary Kay Schneider is Director of Student Programs at Georgetown University.
social research” (Glaser, 1978, p. 2). The method, which Glaser and Strauss (1967) originally developed, was designed to build new theory that is faithful to the area under study and that illuminates a particular phenomenon. The constructs are “grounded” in the particular set of data the researcher collects, and the usefulness of the constructs can be tested in subsequent research (Gall et al., 1996). This qualitative method is effective because it helps develop the building blocks for generalizable, empirical research.

We explored grounded theory methodology, with emphasis on (a) selecting grounded theory as a methodology, (b) research design, (c) the role of the researcher, (d) research procedures, (e) data analysis, and (f) enhancing trustworthiness. The discussion of grounded theory draws on examples from studies related to the development of wisdom, the formation of a gay male identity, and experiencing learning disabilities.

METHOD
Selecting Grounded Theory as a Methodology

Selection of any research method is based on the nature of the research question and the preferences of the researchers (Strauss & Corbin, 1998). The purpose of grounded theory studies is to explore and understand how complex phenomena occur. For example, grounded theory was selected for a research study on gay male identity development because the population from which to select participants was small and little empirical research had been completed to understand the variables associated with the intersection of identity as it related to gay male identity (Stevens, 2000). Grounded theory study was selected for another study to explore the nature of wisdom, how it develops, and what conditions in college affect its development (Brown, 1999).

Research Design in Grounded Theory

Grounded theory draws on the strengths of the separate scientific and interpretive research traditions of the two sociologists who developed the methodology (Glaser & Strauss, 1967). Grounded theory methodology is predicated on the following eight assumptions:

1. The need to get out into the field to discover what is really going on (i.e., to gain firsthand information taken from its source).
2. The relevance of theory, grounded in data, to the development of a discipline and as a basis for social action.
3. The complexity and variability of phenomena and of human action.
4. The belief that persons are actors who take an active role in responding to problematic situations.
5. The realization that persons act on the basis of meaning.
6. The understanding that meaning is defined and redefined through interaction.
7. A sensitivity to the evolving and unfolding nature of events (process).
8. An awareness of the interrelationships among conditions (structure), action (process), and consequences. (Strauss & Corbin, 1998, pp. 9-10)

Due to the grounding of theory in the actual data collected, grounded theory resonates with both the people who experience the phenomenon and those educators
who have a professional interest in it (Strauss & Corbin, 1990). Grounded theory provides techniques and procedures to create an inductively-deductively integrative theory.

**Role of Researcher in Grounded Theory**

In contrast to quantitative methodology where the researcher is detached from the dynamics of the research process, the researcher in qualitative methodology is an integral part of the process. In the qualitative paradigm, the researcher is viewed as the instrument through which data collection and analysis are conducted. As such, the researcher’s assumptions about the phenomenon being explored are critical to the research and should be clearly stated in the research report.

In grounded theory a researcher must demonstrate “theoretical sensitivity” to the subtleties of the data, through being steeped in the professional literature combined with professional and personal experiences (Glaser, 1978). To enhance theoretical sensitivity, four techniques outlined in Strauss and Corbin (1990) are helpful: (a) basic questioning of the data (i.e., who, when, why, where, what, how, how much, frequency, duration, rate, and timing), (b) analysis of the multiple meanings and assumptions of a single word, phrase, or sentence, (c) making novel comparisons to promote nonstandard ways of looking at the data and providing for a more dense theoretical conceptualization, and (d) probing absolute terms such as never and always.

**Participants**

Because grounded theory explores complex phenomena where often little understanding exists, the selection of participants is particularly critical. Intensity and maximum variation sampling are often used to select a broad range of information-rich participants in the authors’ research (Patton, 1990). For example, participants in one study were required to demonstrate a documented learning disability. Purposeful, maximum variation sampling was used to ensure diversity with respect to age, race, gender, academic major, ethnicity, social and economic status, type of disability, and time of diagnosis (Troiano, 1999). In another study, participants were selected based on several facets of their identity to explore identity intersections more thoroughly. Participants in this study were required to self-identify as gay men and to have attended the studied university for at least one full semester (Stevens, 2000).

**Procedure**

Although coding data is the essential component of the grounded theory method, if one does not have quality information from the interviews, then coding can do little. Grounded theory methodology provides only cursory information regarding interview technique. The interview styles for these studies were based on a qualitative interviewing technique that employed a flexible outline of topics and questions (Patton, 1990). Interview styles were not dictated by the grounded theory method. Strauss and Corbin (1998) suggested moving from broad to more specific questions as a way of coding more discriminately. Though a few initial questions were asked, the wording of the questions was not predetermined, and the focus of the inquiry evolved with the interviews (Patton).

Interviewing in grounded theory has the specific intention of exploring students’ experiences and placing them in context. The interviews are designed to acquaint the participant with the nature of the study, to establish rapport, to set a context for
understanding the phenomenon, and then to obtain depth and details of the experience (Seidman, 1991). Interviews are held until redundancy is reached. Participants may meet together as one group to comment upon the tentative themes of the emerging theory and to explore lingering questions.

Interviews are transcribed to best represent the dynamic nature of the living conversation (Riessman, 1993; Seidman, 1991). Each of the verbatim transcripts is returned to the participants for their review so they can remark on the accuracy of the document. During the research, participants are assured confidentiality through the use of pseudonyms in the reporting of data; once the data are coded, connection back to the individual participant is almost impossible to trace. Identification of the individual participant is not paramount, because the concepts generated by the participants—not the individual participants—are at the center of study (Glaser, 1978).

Data Analysis

Grounded theory is a constant comparative methodology that combines data analysis with data collection, and the heart of data analysis in grounded theory is based on three types of coding procedures: open, axial, and selective (Glaser & Strauss, 1967; Strauss & Corbin, 1998). The analytic goals of grounded theory are fivefold:

1. Build rather than test theory.
2. Provide researchers with analytic tools for handling masses of raw data.
3. Help the analysts to consider alternative meanings of phenomena.
4. Be systematic and creative simultaneously.
5. Identify, develop, and relate the concepts that are the building blocks of theory. (Strauss & Corbin, 1998, p. 13)

For clarity, each of the three types of coding procedures is discussed separately below. However, the coding of data is not as discrete as it may appear in the following discussion. The nature of coding in grounded theory necessitates going back to the data for different pieces of information at different times. This action means exploring new topics to saturation and addressing variations as they arise. Consequently, the lines between the three coding levels are blurred.

Open coding. Open coding occurs at the beginning of a study. The primary goals of open coding are to conceptualize and categorize data, achieved through two basic analytic procedures: making comparisons and asking questions of the data. Open coding begins the process of labeling many individual phenomena. In time, a number of individually labeled concepts are clustered around a related theme. The individual concepts are gathered together to form more powerful and abstract categories. For example, Stevens (2000), in his study of gay male identity development, generated from the concepts addressing the feelings of support and rejection associated with environments such as residence halls, classrooms, and work settings, a more abstract category of environmental influences that incorporated these more specific concepts and their associated properties and dimensions. The researchers’ categories are sometimes words elicited by the participants themselves, what Strauss and Corbin (1998) called “in vivo” language.

Once categories are formed in open coding, they are fleshed out in terms of their given properties and dimensions. The prop-
Properties are “characteristics of a category, the delineation of which defines and gives it meaning” (Strauss & Corbin, 1998, p. 101). Dimensions illustrate how each property can vary along a continuum. For example, in the development of wisdom the property of “interactions with others” might be dimensionalized by frequency (never to every day) or amount of impact (little to transformative) (Brown, 1999). Properties and dimensions provide the richness and description to the abstract category. Open coding is achieved by examining the transcripts by line, by sentence, or by paragraph, and sometimes by scanning the entire document.

Axial Coding. The second stage of data analysis is axial coding. Strauss and Corbin (1998) described axial coding as the process of relating categories to their subcategories . . . linking a category at the level of properties and dimensions” (p. 123). A coding paradigm involving conditions, actions and interactions, and consequences actualizes this process. The focus of axial coding is to create a model that details the specific conditions that give rise to a phenomenon’s occurrence.

In this paradigm model, conditions can exist as causal, intervening, contextual, or all of these. Causal conditions refer to the factors that lead to the occurrence of the phenomenon, the subject under study, or the central idea. Intervening conditions refer to a broad host of factors that can bear down upon the phenomena. They are those conditions that “mitigate or otherwise impact causal conditions on phenomena” (Strauss & Corbin, 1998, p. 131). Contextual conditions are the “specific set of conditions (patterns of conditions) that intersect dimensionally at this time and place to create a set of circumstances or problems to which persons respond through actions/interactions” (p. 132). Actions and interactions are processes and facilitated and constrained under given conditions. Finally, consequences refer to the outcome of the phenomena as they are engaged through action and interaction. In axial coding, four analytical processes are occurring: (a) continually relating subcategories to a category, (b) comparing categories with the collected data, (c) expanding the density of the categories by detailing their properties and dimensions, and (d) exploring variations in the phenomena.

Selective Coding. The final stage of data analysis in grounded theory is selective coding, which builds upon the foundation of the previous open and axial coding efforts. Selective coding is “the process of selecting the central or 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). Strauss and Corbin (1998) stated that this central or core category should have the analytic power to “pull the other categories together to form an explanatory whole” and “should be able to account for considerable variation with categories” (p. 146). During this level of coding, theoretical saturation should be reached. This means that no new properties, dimensions, or relationships emerged during analysis.

Identifying the “story” is a key aspect in formulating the grounded theory. The story assists in locating the most salient aspects of the data and turning them into several general, descriptive sentences. The story must be told at a conceptual level, relating subsidiary categories to the core category. Patterns in the data are uncovered, which enables the categories to be sequenced. Once the categories are sequenced, a researcher can begin to cover the wide array of consequences.
of various conditions, giving the story specificity. At this point, the “data are now related not only on a broad conceptual level, but also at the property and dimensional levels for each major category” (Strauss & Corbin, 1990, p. 133). This mapping forms the basis of the theory. The theory is actually considered grounded when it is validated against the data and mapped out narratively and when states of transition and intervening conditions are incorporated as well. Gaps that are discovered in the categories are filled to add conceptual density as well as conceptual specificity to the theory.

A grounded theory story is illustrated in the following example from the study of wisdom development (Brown, 1999). Participants entered college, which provided opportunities for them to interact with others through a broad range of experiences. These students entered the college environment with their personal biographies (i.e., personal characteristics, accumulation of past experiences, etc.), which influenced their orientation to college, as well as to life and to specific situations they encountered. Participants engaged in numerous college experiences, from the most formal and structured, to the most spontaneous and informal, which is made available through the institution, including courses, internships, student activities, work, and living situations. The college environment also provided opportunities to interact with a large number of diverse people (e.g., faculty, staff, peers) in a range of settings (e.g., class, residence halls, student organizations, work). However, participants only developed wisdom through their experiences and interactions when they reflected on the experience, assessed and evaluated its different aspects, and applied it to their lives in some manner. Wisdom was recognized by the researcher and defined by the students. This process varied by rate of speed and amplitude of effect, and occurred each time the core process of reflection, assessment, and application occurred.

In addition to the three different coding procedures, attention to process is critical, because it bridges action and interaction sequences to one another. This feature of grounded theory is absent in other methodologies. In these studies, the linking of sequences is done by being sensitized to:

1. The change in conditions that impact the action and interaction over time.
2. The action and interaction response to that change.
3. The consequences that result from that action and interaction response.
4. Describing how those consequences become part of the conditions influencing the next action and interaction sequence. (Strauss & Corbin, 1990, p. 143)

Process is examined in terms of passage of time to get a sense of how, when, and how often the phenomenon occurs (Glaser, 1978).

The next step in the completion of a grounded theory is the creation of a conditional and consequential matrix, an “analytic device to stimulate analysts’ thinking about the relationships between macro and micro conditions/consequences both to each other and to the process” (Strauss & Corbin, 1998, p. 181). The matrix enables the researcher to consider (a) impacting conditions, potential consequences, and systematic relations among the conditions; (b) action and interaction sequences; and (c) consequences to the integration of college experiences. In the study on the development of wisdom, operationalizing the conditional matrix was
achieved by tracing the various conditional paths to determine how, where, and with what consequences the integration of college experiences occurred (Brown, 1999). Tracings help ensure that the theory is not merely descriptive, but a systematic determination of the relationships between concepts (Glaser, 1978; Strauss & Corbin, 1998).

Another aspect of the data analysis is theoretical sampling of concepts that are relevant to the emerging theory. Theoretical sampling is cumulative, increases the depth of focus, notes variation, and occurs in all three phases related to coding. Sampling is initiated in the open coding process, where theoretical concepts have yet to be discovered. Sampling in axial coding is designed to uncover and validate the relationship between concepts. As relationships are being identified, sampling is undertaken to determine the accuracy of these relationships. The discriminate sampling during selective coding is characterized by its directed and deliberate nature. At this point negative cases are traced back to their origins to uncover at what point and under what conditions the phenomenon diverged. Theoretical sampling is terminated once theoretical saturation is reached. Theoretical saturation is achieved when (a) no new data emerges regarding a category, (b) the category is dense enough to cover variations and process, and (c) relationships between categories are delineated satisfactorily as well.

Aids for Data Analysis. In addition to coding and sampling, a major tool in data analysis is the use of memos and diagrams, which provide a history of the data analysis and help develop the theory. Memos and diagrams provide a fund of analytic ideas, help determine gaps in the researcher’s thinking process, raise data to a conceptual rather than descriptive level, present hypotheses about connections between categories and their properties, and help integrate clusters to generate theory (Glaser, 1978; Strauss & Corbin, 1998).

Although some researchers code all data by hand, alternatives now exist. As recently as 15 years ago most qualitative researchers were coding with handwritten notes and strips of paper. Qualitative data analysis computer programs have now evolved, and they now meet the needs of qualitative researchers. Weitzman and Miles (1995) emphasized that computer programs do not analyze data; the researcher does, but computers provide connections for the researcher to consider during the meaning-making process. One author used NUD*IST’s (Nonnumerical Unstructured Data—Indexing, Searching, and Theorizing) NVivo program to aid in the coding process. The program allows the coding of individual words, phrases, or paragraphs within their context and links to other data coded in the same manner. The program also allows for visual modeling as categories emerged. Additionally, data collection can be achieved through other means such as observation and document analysis.

Finally, after performing the three stages of data analysis, a completed grounded theory can be judged on its elegance, characterized by the fewest possible concepts with the greatest possible scope, and “as much variations as possible in the behavior and problem under study” (Glaser, 1978, p. 125). This type of research sheds light on complex phenomena, with particular emphasis on how it occurs. Grounded theory answers process-oriented questions, connecting the conditions that give rise to a certain complex, dynamic phenomenon: capturing a moving picture rather than a snapshot. In sum, grounded theory generates “a rich, tightly woven,
explanatory theory that closely approximates the reality it represents” (Strauss & Corbin, 1990, p. 57).

DISCUSSION
Enhancing the Trustworthiness of Qualitative Research

In the qualitative paradigm, the concept of trustworthiness refers to a conceptual soundness from which the value of the research can be judged (Marshall & Rossman, 1995). This soundness is likened to a qualitative form of reliability and validity used in quantitative research. However, the concepts of reliability and validity are inappropriate for grounded theory. Strauss and Corbin (1998) posed eight general conceptual questions to provide one way to assess the trustworthiness of a grounded theory:

1. Are concepts generated?
2. Are the concepts systematically related?
3. Are there many conceptual linkages, and are the categories well developed? Do categories have conceptual density (richness of the description of a concept)?
4. Is variation within the phenomena built into the theory (how differences are explored, described, and incorporated into the theory)?
5. Are the conditions under which variation can be found built into the study and explained?
6. Has process been taken into account?
7. Do the theoretical findings seem significant, and to what extent?
8. Does the theory stand the test of time and become part of the discussions and ideas exchanged among relevant social and professional groups? (pp. 270-272)

With the framework that Strauss and Corbin (1998) outlined, trustworthiness is strengthened by the concepts of Lincoln and Guba (1985). In general, trustworthiness is bolstered by the amount of time spent in the field and with the data, triangulation of data (exploring data from different sources, methods, investigators, and theories), an alertness to the subjective lenses and subsequent biases that the qualitative researcher brings to the study, and mapping what works within the boundaries and limitations of the study (Denzin, 1978; Lincoln & Guba). Trustworthiness is also strengthened by exploring negative cases that illuminate more varied and sophisticated expressions of the phenomenon (Glaser, 1978). According to Lincoln and Guba, trustworthiness is achieved by the satisfactory attainment of four constructs that relate to credibility, transferability, dependability, and confirmability, which together established the “applicability, consistency, and neutrality” (p. 143) of the study. All four constructs must be attained for the research to be considered trustworthy. Each of these constructs is described below.

Credibility
Credibility is a construct that refers to how much the data collected accurately reflects the multiple realities of the phenomenon (Lincoln & Guba, 1985). Credibility is primarily produced through prolonged engagement with the informants and triangulation of the data (Denzin, 1978; Lincoln & Guba). Credibility is achieved through sharing with each participant the verbatim transcript of the individual interviews, and
drafts of the emerging concepts and categories and even through convening a final group meeting to share the completed grounded theory. For qualitative researchers, the triangulation of data covers a range of collection modes such as interviews, observations, or focus groups. Another method of data collection is document analysis. Troiano (1999) supplemented participant interviews with an analysis of students’ most recent learning disability diagnostic testing, and individual education plans.

Negative case analysis is also an important concept in achieving credibility. Negative case analysis includes the careful examination of the individual or individuals who appear to be the exceptions in the research (Lincoln & Guba, 1985). To increase credibility the researcher must explore these cases thoroughly enough to understand the differences and incorporate them into the model, which provides the flexibility and variation needed to strengthen a grounded theory model (Strauss & Corbin, 1998).

Peer debriefers assist in clarifying aspects of data analysis that may have been missed by the researcher and remained in an inchoate form. The peer debriefers review each transcript and help test emerging designs and hypotheses to “keep the inquirer honest” (Lincoln & Guba, 1985, p. 77). The peer debriefers serve as sounding boards for the researcher, offering different lenses to analyze the data and serving as meaning makers. Credibility is satisfactorily achieved because the theory is grounded directly in the data derived from the participants and reflects the levels, dimensions, and conditions of their experience.

Transferability
Transferability refers to the theoretical parameters of the research (Marshall & Rossman, 1995), and to the applicability of one set of findings to another setting. Transferability is strengthened by illuminating the research from a variety of participants’ diverse perspectives and experiences, as well as from the contributions of the peer debriefers. The descriptions of the research, the participants, the methodology, the interpreted results, and the emerging theory provided this data (Lincoln & Guba, 1985; Marshall & Rossman). If assumptions are met and the population is adequately described, future researchers should be able to make determinations about the practical application of this inquiry in other settings. The burden of demonstrating transferability rests with another researcher or practitioner who attempts to transfer findings based on the sample of one study to another analogous setting.

Dependability
Dependability ensures that the data represent the changing conditions of the phenomenon under study. The hallmark of grounded theory is that it incorporates the different conditions, properties, and dimensions of the phenomenon discovered through the grounded theory methodology. An inquiry auditor ensures that the processes of the method are “audited” (Lincoln & Guba, 1985). The inquiry auditor guarantees grounded theory procedures are followed through understanding the coding and examining the emerging theory and its categories and verifying that they are used correctly. This person uses the raw data and the researcher’s findings throughout the research to conduct this verification. This objective auditor ensures stakeholders—participants, readers, dissertation committees, and the like—that emerging codes, concepts, and theories are dependable (Lincoln &
Guba; Strauss & Corbin, 1998).

Confirmability

Confirmability examines the “objectivity” of the research; that is, another researcher can confirm the study when presented with the same data. An audit trail provides the necessary materials to confirm the research. The audit trail for many grounded theories includes the raw data (audiotapes, verbatim transcripts, and researcher notes from the interviews and focus groups), and coding and memos from each round of interviews.

The inquiry auditor, discussed in the previous section, also verifies the product of the research (Lincoln & Guba, 1985). Pursuant to grounded theory, this individual examines the integrative or key categories, the selection of a central category (sometimes called core category), and their interconnections in developing the emerging theory, and confirms the product. Using materials from the audit trail, the inquiry auditor provides an objective perspective separate from the meaning-making process of which peer debriefers were a part. Unlike the peer debriefers, the inquiry auditor is informed but detached from the meaning-making aspects of the study. Additionally, confirmability is achieved when the findings of the study emerge from the participants, ensuring that the data spoke for itself, not as a mouthpiece of the biases and assumptions of the researcher.

In sum, student affairs researchers can increase contributions to the understanding of students’ higher education experiences. A confluence of many different streams has given unprecedented opportunities to professionals in this field: the shift from teaching to learning, greater accountability from multiple stakeholders, and a general renaissance in undergraduate education. Grounded theory can be an effective tool in conceptualizing complex phenomena, providing language to describe it, detailing how it occurs, and ultimately, student affairs educators’ contributions to this process.

Student affairs researchers’ ability to advance (a) knowledge about student learning and developmental experiences and (b) higher education’s readiness to define success in terms that include our efforts has created an ideal professional opportunity.

Correspondence concerning this article should be addressed to Scott C. Brown, Director, Career Development Center, Mount Holyoke College, 50 College Street, South Hadley, MA 01075; scbrown@mtholyoke.edu
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