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**The Grounded Theory Method:  
Deconstruction and Reconstruction in a Human Patient Simulation Context**

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**Abstract**

Certain modes of qualitative inquiry, such as grounded theory, can serve to uncover the abstract processes and broad conceptual themes influencing the personal experiences of undergraduate nursing students encountering clinical scenarios utilizing human patient simulators (HPS). To date insufficient research has been conducted to uncover the basic social-psychological processes encountered by students as they engage in a HPS-based clinical scenario. The authors assert that HPS-based learning experiences are in reality social endeavors that lead to the creation of socially negotiated knowledge and meanings relevant to the adult learner. To understand how grounded theory is suited to deriving answers to these questions, an analysis of the theoretical and philosophical foundations of grounded theory is undertaken. This critical analysis concludes with a discussion of specific considerations to be reflected upon by researchers when applying the inductively derived method of grounded theory in uncovering the social processes that occur within HPS-based clinical scenarios.

**Keywords:** grounded theory, human patient simulation, symbolic interactionism, social constructionism

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## **Introduction**

With a focus on the social aspects of human interaction (MacDonald, 2001; Neil, 2006), the inductive qualitative research method of grounded theory is ideally suited to inquiry into the little known aspects of the simulation phenomenon that lie outside the scientific paradigm. Research into human patient simulator (HPS) based nursing education has been limited (Day-Black & Watties-Daniels, 2006; Mallow & Gilji, 1999). Although the amount of inquiry into this technology-based learning tool is growing (Bremner, Aduddell, Bennett, & VanGeest, 2006; Childs & Sepples, 2006; Feingold, Calaluce, & Kallen, 2004; Goolsby, 2001; Madorin & Iwasiw, 1999), little or no research has occurred to investigate the social processes and pedagogical principles that underlie the student engagement in a simulated clinical scenario (Day-Black & Watties-Daniels, 2006; Mallow & Gilji, 1999). HPS is an effective educational tool particularly suited to emancipatory or constructivist pedagogy, yet its perceived effectiveness should not circumvent the need to generate theory to aid the incorporation of simulation into undergraduate nursing curricula. Many perceive technology, like science, as neutral or value free (Jeon, 2004; Schumacher & Gortner, 1999), yet the authors contend that HPS-based simulated clinical learning sessions are subjective, value-laden social endeavors that lead to the collaborative creation of knowledge and meaning for student nurses who are engaging in this learning activity. Unfortunately, the majority of the simulation research to date has resided primarily in the scientific paradigm (Bradley & Postlethwaite, 2003), which in turn risks devaluing the subjective voices of our students (Robinson, Robinson, & Davies, 1996). As Wuest (2007) notes, grounded theory is well suited as a research method when little is known about the situation of interest. We believe that there is a need to develop a theoretical perspective with regard to the process involved when nursing students engage in a high-fidelity simulated clinical scenario. This perspective will be useful in making decisions on the appropriate application of nursing pedagogy and educational theory in developing future simulated clinical activities.

Owing to the wide variety of definitions for human patient simulation in the literature, and prior to the more detailed consideration of the role of grounded theory in simulation research, it is first necessary to explicate, albeit briefly, the pedagogical application of HPS in nursing education. Bearnson and Wiker (2005) note that a high-fidelity HPS is an interactive computer-controlled mannequin that will respond to nursing interventions such as medication administration and oxygen supplementation in a lifelike manner. For the purpose of this manuscript, *HPS* refers to a high-fidelity simulator that is designed to provide a level reflective of an immersive clinical environment (Yaeger et al., 2004). A typical nursing program simulation lab is designed to replicate a hospital room with a high-fidelity computer-driven mannequin that the instructor controls, the purpose of which is to respond to student interventions. A common example is Medical Education Technologies' (2004) high-fidelity HPS that is able, for example, to blink, breathe, and speak. Students are able to assess many parameters such as the heartbeat and pulses. HPS provides humanlike responses via interactive physiological systems such as cardiovascular, respiratory, and neurological (among others), and nursing interventions such as "CPR, intravenous medication, intubation, ventilation, and catheterization" (p. 3). Through the use of specially designed software, instructors control and run scenarios in which students practice interventions in a safe environment. These scenarios are usually videotaped, which allows the students and instructors to review their actions and responses during the debriefing session. Debriefing should immediately follow the scenario and is considered a key component of the learning process to promote reflection and build confidence in nursing students (Yaeger et al., 2004). From this description, it becomes apparent that the HPS can be a highly technical teaching-learning environment; consequently, it is behooves us to transcend the limitations of the science-technology paradigm so that we can begin to mitigate a purely rational approach to pedagogy.

What follows is a deconstruction of the various aspects of grounded theory that render it ideally suited as a research method for conceptualizing the experiences of today's nursing student who is participating in an HPS-based clinical scenario. Because we are unaware of any literature relating grounded theory and high-fidelity HPS, this discussion takes the format of a critical analysis or deconstruction of the method, which will begin with an outline of grounded theory along with a discussion of its epistemological and ontological foundations as they relate to the use of technology-based learning tools such as HPS in nursing education. This process will include a discussion of the influence of symbolic interactionism and social constructivism on grounded theory. Finally, we consider aspects of social processes inherent within high-fidelity simulation as they relate to grounded theory that ultimately call for a refocusing of HPS-based research methodology.

### **Grounded theory in a simulation research context**

Grounded theory is a qualitative research method in which the researcher uses insight gained through the direct observation of a phenomenon (e.g., simulated clinical experience) to develop theory (Glaser & Strauss, 1967). At its heart is a systematic yet flexible process of procedures to produce inductively derived mid-range theory about a particular experience or social phenomenon (Charmaz, 2006; Strauss & Corbin, 1990). Inductively derived theory indicates that grounded theory method is based on conceptualization that is directly linked to the data rather than on testing a predetermined hypothesis, as is typical of most other research methods (B. Glaser, 1978; Strauss & Corbin, 1990). In other words, a hypothesis will emerge from a constant and careful analysis of the data from observation and participants' descriptions. The goal is theory that is grounded in personalized accounts of an experience (Charmaz, 2006), which serves to make the thematic conceptualizations of a pattern of behavior pertinent to those involved (B. Glaser, 1978, 2005). Milliken and Schreiber (2001) explain that in grounded theory, "the researcher's job is to investigate the socially constructed meanings that form the participants' realities and the behaviors that flow from those meanings" (p. 180). The grounded theorist's goal is to defer to those with true expertise on a phenomenon, individuals who have experienced the phenomenon. To truly capture the experience of students who engage in simulation, researchers must defer to the expertise of these students to be able to derive data that truly reflect their reality.

Clarke (2003) further corroborates this theory in stating that grounded theory is focused on uncovering basic social processes in the data derived from the participants' actions with the phenomenon of concern, which occurs through the abstract analysis of ongoing data derived from the phenomenon: "Around these basic process are then constellated the particular distinctive conditions, strategies, actions, and practices engaged in by human and nonhuman actors involved with/in the process and their consequences" (p. 558). The analysis of ongoing action or data incorporation led Clarke to view grounded theory as an action-orientated research method. Clarke's emphasis on the role of both human and nonhuman actors also emphasizes the role of nonhuman aspects of HPS-based simulated scenarios, such as the simulator itself, in the social construction of meaning and knowledge. In simulation it is important to develop conceptualizations of the entire social process that involve both human and nonhuman factors.

Wuest (2007) notes that grounded theory is appropriate when little is known about a particular phenomenon or when the theory that has already been developed does not appropriately explain the process that is occurring within the same phenomenon. It is also a pertinent research framework if the goal is to capture human behavior in a social process context (B. Glaser, 1978; Glaser & Strauss, 1967; Wuest, 2007). For the purpose of simulation research, grounded theory is particularly relevant to the social processes and social discourse that occur in the group work during a scenario and the debriefing session after a scenario. Wuest further validates the method's

applicability to simulation research: “Human behavior related to health issues, developmental transitions, and situational challenges is well suited to grounded theory research in nursing” (p. 244). Although there is apparent relevance to HPS-based inquiry the authors have always found it disconcerting to consider the call from grounded theory to analyze ‘problems’ that are relevant to the participants (Charmaz, 2006; B. Glaser, 1978). The majority of the simulation research to date has examined, often through quantitative ratings, students’ HPS-based learning session evaluations in which the majority of the participants rated simulation positively (Bremner et al., 2006; Childs & Sepples, 2006; Feingold et al., 2004; Goolsby, 2001; Madorin & Iwasiw, 1999). This begs the question, where is the “problem” for the participants? Fortunately, this is a deductively derived way of viewing the phenomenon in question and runs counter to the inductively derived theory that results from grounded theory methods. Crooks (2001) corroborates by cautioning researchers not to predetermine the problem or process. Are researchers truly allowing theory to inductively emerge if they assume that they know what is wrong prior to initiating the data collection? As simulation researchers we need to allow the data to determine the problems or social processes through the emergence of themes that emerge directly from the data (Crooks, 2001).

### **Symbolic interactionism and HPS**

Grounded theory as a research method is formed from the theory of symbolic interactionism (Jeon, 2004; Klunklin & Greenwood, 2006; Wuest 2007). Blumer (1969) is considered one of the creators of symbolic interactionism; he proposed that people’s actions towards a phenomenon or object are guided by the socially created meanings that they impart to them. Meaning is derived from social interaction and modified through each individual’s interpretation (Blumer, 1969). People create linguistic symbols for objects through social interaction with other individuals in their social groups, thereby creating shared meanings (Blumer, 1969; Klunklin & Greenwood, 2006; LaRossa & Reitzes, 1993). These symbols direct responses, prompting people to adjust their behavior based on the socially determined meanings of symbols, which results in an internalization of attitudes, beliefs, and assumptions about the wider community around them (Klunklin & Greenwood, 2006). For the symbolic interactionist, objects themselves have no intrinsic meaning and become symbols only when a social group assigns meaning to them (Klunklin & Greenwood, 2006). This leads us to the notion that people create their own meanings, knowledge, and reality in the world in which they live through social discourse. Wuest states, “People actively shape the worlds that they live in through the process of symbolic interaction and that life is characterized by variability, complexity, change, and process” (p. 241). Through communication with others, an individual’s world becomes comprised of unique meanings and symbols that are continually in a state of flux due to the complexities of human interactions (Blumer, 1969). This is in part because social interaction pushes individuals to continually determine how others interpret their actions, which results in pressure to alter our responses, knowledge, and meaning schemes (Klunklin & Greenwood, 2006). Throughout the HPS-based learning process, student nurses are engaged in discourse that continually reconstructs their personal meaning schemes, leading to changes in how they both interpret and integrate knowledge relevant to practice.

Jeon (2004) argues that grounded theory does not fit research questions designed to predict, control, and measure by testing already existing theories or cause-effect relationships. Similar to grounded theory, symbolic interactionism calls for an examination of the processes to gain an understanding of the “knowing how” aspect of the way that an individual acts in a particular situation (p. 250). This relates well to the abstract theoretical conceptualization of a phenomenon (Jeon, 2004; Klunklin & Greenwood, 2006). Researchers using grounded theory and symbolic interactionism aspire to creating an understanding of the complexities of experiencing a

phenomenon from the perspective of the individuals themselves rather than to determining objective truth outside of their experience (Jeon, 2004). It is impossible to understand the world or the person outside of their interpretation of the phenomena because of the constant alterations that social interaction with others causes (Jeon, 2004). This ultimately leads to the conclusion that research needs to involve observation and analysis of the perspectives of individuals and social groups in their natural world. Grounded theory research is designed to key in on these aforementioned complex social processes and shared meanings derived therein (Jeon, 2004; Klunklin & Greenwood, 2006). The authors believe that conceptualizing the personal experiences of student nurses who engage in the social processes of an HPS-based clinical scenario is appropriate if educators desire to gain a sufficient understanding of this learning tool to guide the application of proper pedagogy.

### **Symbolic interactionism and social constructionism: The connection**

The authors assert that both symbolic interactionism and social constructivism influence not only research methods of grounded theory but also HPS-based simulation education in nursing. With regard to the concepts and components that make up both social constructionism and symbolic interactionism, it is possible to see connections between the two sociological theories. Buechler (2000) sees modern social constructivism as a renewal of symbolic interactionism and the key premise of symbolic interactionism as reflected in social constructivism. Both theories espouse the concept of socially created meanings/symbols that develop through social discourse. Buechler states, "Whether construed as meanings, interpretations, definitions, or identities, symbols are central to the communication process and interaction networks that comprise society" (p. 40). These concepts link the two theories at a foundational level (Buechler, 2000). It is therefore relevant to consider both social constructionism and symbolic interactionism as pertinent to the socially derived meanings and knowledge that student groups who engage in a simulated clinical experience create.

### **Social constructionism and HPS**

Kvale (1996) argues that modern conceptions of reality are focused on the social construction of knowledge rather than on traditional views of reality that consider knowledge a mirror of reality. This leads to a focus on language and construction of a reality that reflects a perspective grounded in a local socially created context (Kvale, 1996). Social constructionism's "focus is on the interpretation and negotiation of meaning of the social world" (p. 41). Gergen (1999) counters by stating that social constructionism in reality does not remove the objectivity of truth seen in science but, rather, attempts to alter how we view truth. Gergen further suggests that it is impossible to disregard the notion that all attempts at depicting reality are clouded by personal motivations, assumptions, and beliefs. White (2004) corroborates Gergen's opinion by noting the influence of culture on the nature of reality: Even if there is an objective reality, humans will always use their own linguistic symbols to interpret the nature of this reality. Therefore, the authors believe that the social constructivist view renders the argument on ontology pointless. If humans are always interpreting their reality through a socially constructed lens, then it is impossible to gain access and view the nonhuman world to determine truth and reality (Rorty, 1991; as cited in White, 2004). Regardless of an individual's ontological views, in social constructionism knowledge is created from the perspective of that individual and is validated through practice and mutual discourse (Kvale, 1996). In essence, knowledge is created by and reflects the ability of the learner to perform certain actions successfully (Kvale, 1996). For the learner, knowledge is created through action and conversation (Kvale, 1996). This presents an interesting treatise on human patient simulation in nursing education as a modality to create

knowledge through social construction. HPS-based simulated clinical scenarios are both action- and practice-based, which allows students to negotiate their way through a scenario via social discourse while utilizing previously learned clinical skills and theoretical knowledge. Debriefing then provides an outlet for critical reflection and builds linguistic perspectives on meaning and knowledge that are relevant to the learners.

Because social constructionism is often linked to grounded theory (Clarke, 2003), it is important to further analyze social constructionism's theoretical components to better understand the connection between grounded theory and high-fidelity simulation-based nursing education. Like symbolic interactionism, social constructionism considers language a vital component of all knowledge production because it ascribes meaning to objects in our society (Gergen, 1999; Massad, 2003). White (2004) argues that if humans did not attach meanings to phenomena or objects through social discourse, any action taken with regard to them would be random and unfocused. Social communities have the ability to ascribe meaning to items through the influence of discourse, consensus, and culture (White, 2004). Robinson et al. (1996) contend that the technology used in nursing reflects the culture and linguistics of the profession of nursing. We also argue that the technology-based learning tools used in undergraduate nursing education reflect the institutional culture of nursing education and pedagogical practices, but high-fidelity-based simulation education requires research to uncover the social processes that guide knowledge creation within. Without inductively deriving these social processes imbedded within HPS-based clinical scenarios, it is pointless to determine the best pedagogy to develop simulation curriculum. In essence, nurse educators would be blindly following a learning trend with little insight into whether it is meeting the learning needs of the neomodern adult learner. Robinson et al. regarded science—ergo technology—as amenable to social construction like any other paradigm. Another important consideration is the belief that technology imposes new social interactions on individuals (Robinson et al., 1996). Therefore technology-based learning tools appear to be amenable to social construction, which logically leads to the applicability of grounded theory's analysis methods that focus on the socially created meanings or symbols of social constructionism. Nurse educators should recognize the urgency to determine the underlying forces that envelop nursing's educational practices such as human patient simulation.

### **Social discourse in simulation education**

Because grounded theory is designed to analyze social processes and the social creation of knowledge (B. Glaser, 1978; Glaser & Strauss, 1967), it is important to consider social discourse and its role in the HPS-based simulated clinical learning environment. The role of social discourse in a group learning session is key to the maximization of learning and the formation of knowledge in the learner's cognitive schema (R. Glaser, 1991; Whitelaw, Sears, & Campbell, 2004). Whitelaw et al. ascertain that learning in a group relies on communication, which leads to the development of shared understanding, collaborative learning through social experience, and problem solving.

From the field of transformative learning theory comes significant discussion on the benefits of social discourse as a form of learning and knowledge development. For adult learners the benefits of discussing and validating ideas, knowledge, meaning, and assumptions in a group setting with peers are immense (Cranton, 1994; Mezirow, 1998). The development of a learning community allows students to present ideas for validation by the larger group, which is vital to the social construction of knowledge (Mezirow, 1998). In essence, students present ideas and insights that others in the group then cognitively process by acting as a type of filter that may or may not

confirm the students' originally created meanings and ideas (Cranton, 1994; Mezirow, 1998). This helps to solidify the creation of new knowledge and social meanings relevant to the learners and their peers and thereby empowers them to become autonomous thinkers.

HPS-based clinical scenarios have the benefit of allowing students to challenge their beliefs, assumptions, skills, and interpersonal knowledge in a safer less threatening environment as compared to the real clinical setting. Human patient simulation allows social discourse and hence the creation of knowledge without risking human lives (Leigh & Hurst, 2008; Perkins, 2007). Students are able to work as a team to problem-solve nursing care dilemmas and plan interventions while constantly validating and evaluating each individual's contributions (or lack thereof) to the experiential learning process embedded in a properly designed simulated clinical environment. A key element in the typical HPS-based clinical learning session that promotes social discourse and the creation of relevant knowledge for student nurses is the cognitive stress of participating in this process along with the subsequent debriefing session that should follow participation in a scenario.

Whitelaw, Sears, and Campbell (2004) argue that through social dialogue and interpersonal interaction during complex learning experiences, it is possible to create cognitive strain similar to that experienced in related "real" experiences. Murphy et al. (2004) found that medical students who performed a real cardiac resuscitation on a live patient exhibited heart rate markers similar to those that occurred when they performed cardiac resuscitation on an HPS. This provides some evidence that HPS-based simulation has the potential to offer the participants a high level of reality-based complex clinical immersion and cause cognitive strain. Complex learning environments have the potential to transform students and move them from relying on external authority to becoming an internal authority (Keegan, 2000; as cited in Whitelaw et al., 2004). The use of simulation can empower students, make them autonomous thinkers, and create meanings through peer-driven discourse. Whitelaw et al. state that interaction within a group engages students in social discourse and leads to the development of a knowledge community and a professional culture. Socialization into the profession of nursing is a key task of nursing education programs (Lindeman, 2000), and the authors assert that HPS-based clinical scenarios can aid in this socialization process. This requires further research to uncover the social processes that provide insight into how to maximize the potential of high-fidelity-based simulation in nursing education.

### **Reconceptualizing human patient simulation research**

High-fidelity HPS is a learning tool that by its very nature appears related to the science-technology paradigm, but the authors contend that there is a vital need to refocus HPS-based research away from the historical domination of the scientific inquiry as noted by Bradley and Postlethwaite (2003) or risk devaluing the voice of the adult learners that nursing education serves. This is particularly pertinent due to the increasing rate of adoption of simulation into nursing curriculum (Day-Black & Watties-Daniels, 2006), the difficulties of the modern health care environment to support the clinical training model of traditional nursing education (Tanner, 2002, 2006), and the apparent connections between the simulated clinical experience, symbolic interactionism, and social construction of knowledge. Pedagogy is a rapidly changing and evolving construct due to the proliferation of technology (Koller, Harvey, & Magnotta, n.d.; Roblyer, 2003). It is also vital to consider the learning preferences and perspectives of the incoming millennial generation, which comprises the bulk of students entering nursing programs. These students have a high level of comfort with technology and expect it to be utilized in their learning experiences (Bassendowski, 2007). Skiba (2007) ascertains that the modern adult learner desires learning based on collaboration, autonomy, and immersion in reality-based experiences.

Learners prefer not only collaborative learning, but also the opportunity to create their own knowledge and meaning schemes (Koller et al., n.d.). Dede (2005) contends that future generations will focus on mediated immersion to help them to construct relevant knowledge. It is obvious that properly designed HPS-based simulated clinical scenarios can play a significant role for millennial-generation nursing students. Experiencing a high-fidelity simulated clinical scenario will help students to work as a team, problem-solve through consensus building, and, through the debriefing process, critically reflect on their performance, thereby cementing knowledge and altering their beliefs, values, and assumptions about nursing care (Cranton & King, 2003; Mezirow, 1994). These issues highlight the need for inquiry into the social processes behind simulated clinical experiences that involve a high-fidelity HPS to build simulation curriculum based on the most effective use of sound pedagogy and educational philosophy.

### **Considerations for simulation research**

The challenge arises in comparing grounded theory to theoretical, philosophical, or research paradigms because it does not fit well with others. B. Glaser (1998) explains that grounded theory does not require any change in the researcher's philosophy or views on epistemology and ontology. Because grounded theory calls for thematic analysis from the perspective of the participant, it does not come encumbered with any ideological paradigm. Attempts have been made to outline the different ontological stances of Glaser's, Strauss and Corbin's (1990), or Charmaz's (2006) versions of grounded theory. For example Annells (1996) states that in grounded theory the "social and natural worlds have differing realities, but . . . both forms of reality are probabilistically apprehensible" (p. 382). Charmaz outlines the differing forms of ontology that dominate theoretical analysis of grounded theory. These include B. Glaser's grounded theory, which espouses the ideology that reality or true meaning exists in data; Strauss and Corbin's version, which espouses a reality based on an enacted truth; the version of Charmaz herself, which espouses a constructivist-based grounded theory that considers reality as a constructed "interpretive portrayal of the studied world, not an exact picture" (p. 10). Although it may be useful to understand the ontological underpinnings of grounded theory methodology, Milliken and Schreiber (2001) state that with regard to grounded theory, "People can find support for it in any ontology they wish" (p. 44). This concept is simplistic and at the same time empowering in its approach. The power of grounded theory is that it fits any theoretical stance that researchers choose because the basic method is structured with the epistemological idea in mind that the participant is the expert (Milliken & Schreiber, 2001). Investigation is designed to uncover the socially constructed meanings of the participant's own reality (Milliken & Schreiber, 2001). Although we believe that it is still necessary for researchers to be cognizant of their epistemological and ontological stance, it is encouraging to know that grounded theory imposes no preconceived trajectory on the theoretical outcomes derived from data.

Blumer (1969) presented an argument that seems to call for a research method such as grounded theory when he noted that research into the social world not only focuses on the direct analysis of intimate accounts of the phenomenon but also requires in-depth abstract analysis: "[The] research scholar who engages in direct examination should aim at casting his problems in a theoretical form, at unearthing generic relations, at sharpening the connotative reference of his concepts and at formulating theoretical compositions" (p. 42). Blumer contends that scientific analysis is inadequate in the study of social phenomena because it forces data into preconceived or synthetic frameworks that bind and restrict the analysis by limiting the study to two distinct variables with a specific relationship between them. With regard to any social phenomenon, is it realistic to limit or restrict inquiry in this way? How many social phenomena like the one that occurs within an HPS-based clinical scenario group's interactions and debriefing are as simplistic as to allow easy condensing into two or three or even four definable variables? Johnson (1999) argues that nursing

care is a social construct and that difficulty arises in trying to apply scientific research and statistics to the extremely complex interpersonal phenomena of nursing care. The authors contend that the immersive reality-based nursing care imbedded within simulation, as in real nursing care, is also a social construct. During the group process of simulation, factors such as teamwork, group dynamics, team roles, and so on result in a complex, interwoven experience that is not easily defined.

It can be useful to consider other research paradigms that use methods of analysis similar in some respects to grounded theory, such as phenomenology or discourse analysis (Starks & Trinidad, 2007). Phenomenology calls for the analysis of intimate accounts of individuals' embodied experience to gain meaning from each person's account (Starks & Trinidad, 2007), yet, Blumer's (1969) argument holds sway, in that to gain insight into the complexities of socially negotiated knowledge or, more specifically, the social processes within the simulation learning experience, research needs to at least start at the level of generic, theoretical relations. If the goal of inquiry is to gain insight that is general enough to allow nurse educators the opportunity to maximize the application of sound pedagogy in structuring simulation-based experiences that best meet the needs of the modern adult learner, then it is obvious that the thematic analysis of grounded theory has a role to play. Thematic analysis of data collected from observation and participants' accounts, unencumbered by ideology or empirically structured frameworks, will allow broad conceptualization that truly reflects the lived experiences of student nurses who are engaged in a simulated clinical environment. Abstract themes that are generalizable to the majority of nursing education simulation settings will be the most effective in allowing educators to relate the research to the integration of sound pedagogical practices that truly embody the learning needs of the neomodern nursing student.

### **Conclusion**

With a foundation in the theoretical constructs of social constructionism and symbolic interactionism, grounded theory provides the researcher with a methodology free of the burden of ideology and preconceived frameworks that are characteristic of many other forms of inquiry (B. Glaser, 1998; Milliken & Schreiber, 2001). This will foster research to conceptually analyze the lived experiences of students who engage in an HPS-based simulated clinical scenario. Through the development of the abstract thematic analysis that is a feature of grounded theory (Charmaz, 2006; B. Glaser, 1978; Strauss & Corbin, 1990), it is possible to offer nurse educators a mid-range theory on simulation that facilitates consideration of proper pedagogy in creating simulation curriculum in undergraduate nursing programs. With the proliferation of technology in nursing education, further research is required to guide pedagogy and curriculum development. Human patient simulation has the potential to provide an immersive reality-based clinical learning experience that fits the preferences of the modern nursing student. Unfortunately, nursing education has embraced this technology-based learning tool with little investigation of the processes that it uses to promote nursing students' knowledge, skill, and meaning development (Day-Black & Watties-Daniels, 2006). Through the aforementioned critical analysis of social constructionism and symbolic interactionism, it is possible to visualize the role of social discourse and socially created knowledge in the simulated clinical environment. The high-fidelity HPS-based simulated clinical scenario has the potential to promote social dialogue and group processes and influence the socialization of novice nursing students. Through the use of grounded theory, the authors call for research to create a substantive theory that will not only impact the application of sound educational theory and philosophy when creating HPS-base clinical scenarios, but also help to form a foundation for future studies, which Morse (2001) argues is a common application of the theory that arises from this inductive research method.

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