The purpose of this article is to describe the evolution and implementation of a graduate nursing program’s curricular framework. A number of factors contributed to the realization that the curricular framework needed revision. These factors included the rapid changes occurring in the U.S. health care system, the publication of the 2011 edition of the *Essentials of Master’s Education in Nursing*, and the publication of the Institute of Medicine’s report entitled *The Future of Nursing: Leading Change, Advancing Health* (2010). A careful analysis of key guiding documents resulted in the development of three central, interrelated concepts to guide this revision, namely, relationship-based care, creative inquiry, and leadership. (Index words: Graduate nursing education; Complex adaptive systems; Relationship-based care; Creative inquiry; Leadership)

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IN ORDER FOR nurses, particularly those in advanced practice roles, to contribute to the transformation of the health care system, it is essential that educational programs prepare their graduates with the requisite knowledge, skills, and abilities to perform at their best in today’s rapidly changing health care systems. Curricular change within the context of the principles of complex adaptive systems (CASs) facilitates this and minimizes the gap between education and practice.

**Complex Adaptive Systems**

The complex nature of today’s health care system warrants a new vision for nursing education. Reflective in this vision is the understanding that health care organizations are CASs. CASs are intricate, multifaceted, interactive systems that are responsive to dynamic environments (Crowell, 2011). The ability of a system to adapt will depend on the assimilation of key properties inherent to CASs. These key properties do not exist in isolation. They are interconnected and interdependent, and include self-organization, embeddedness, diversity, distributed control, nonlinearity, emergence, and order–disorder (Lindberg, Nash, & Lindberg, 2008).

CASs are open systems that are subject to many influences from both internal and external sources. These sources include personnel who may work within a particular system, or they may be part of the external environment. Irrelevant of the influential source, the personnel form additional CASs that interact between and among each other. It is in this context that CASs are embedded (Lindberg...
et al., 2008). For example, hospital care units are CASs within a larger hospital system; a hospital system is a CAS within a particular community. The hospital unit system is an internal source, and the community is an external source.

The ability of personnel to adapt between and among systems is synonymous with embracing change. According to the theory of CAS, “a healthy system is always poised for change; a system without this dynamic capacity cannot survive” (Lindberg et al., 2008). Change may cause disorder; therefore, if a CAS is poised for change, order will likely emerge. As order materializes, so too will new patterns. The new patterns will then impact the system in a manner that is different from what is known (self-organization; Smith, 2011). It is through this process that creativity and innovation materialize.

System interactions have the potential to capitalize on diverse entities, meaning that input should be obtained from many individuals, including those who have not been traditionally included in the problem-solving process. If a particular patient care unit within a hospital system was engaging in a quality improvement process, in order to capitalize on diverse entities, input would be obtained from housekeeping, registered nurses, nurses in advanced practice, nursing assistants, physicians, social work, volunteers, and, perhaps, even patients and family members. By allowing all members of the health care team an opportunity to engage in problem solving, control of the problem is distributed. This process allows the system to obtain the benefits of diversity. Furthermore, a system that is open to diversity is more likely to adapt to change when a problem occurs (Lindberg et al., 2008).

The outcomes that occur from diverse interactions are often unknown. This uncertainty is equated to nonlinearity. When something is nonlinear, it means that it does not go in a predicted direction. It is within this unexpected direction that an entire new pattern may develop (emergence). As with self-organization, it is through emergence that creativity and innovation also materialize (Smith, 2011).

To prepare nurses to function within a CAS, there must be a shift in thinking related to educational preparation. The care provided by nurses at all levels is multidimensional. Health care factors that contribute to this include the elder population, treatment for disease processes, and multiple comorbidities, cultural diversity, the number and variety of care providers, technology, and demands of reimbursement and regulatory agencies (Lindberg, 2011).

Furthermore, nurses have many roles that include being care providers, care designers, managers, coordinators of care, and members of an interprofessional health care team (Barton, Armstrong, Prehelm, Gelmon, & Andrus, 2009). As health care reform evolves through legislation of The Patient Protection and Affordable Care Act P.L. 111-148 (2010) and Health Care Education and Reconciliation Act of 2010 (P.L. 111-152), the roles designated as fundamental to advanced practice will likely be enhanced to achieve national health care goals of improved access to health care, improving quality, and controlling costs (American Academy of Nursing, 2010).

The development of these roles within a CAS is based on multiple factors. One of the key factors is the development of and the overall impact of relationships within systems.
Plsek (2003) recognizes that the overall behavior of a CAS emanates as a result of interactions and interconnections. The interactions and interconnections will be beneficial if diversity is embraced. Diversity allows for unique and innovative ideas to emerge from those directly and indirectly involved (Smith, 2011). It is not about whom we interact with but what ultimately transpires as a result of that transaction. It is the understanding that persons at all levels have something to offer; control is distributed.

Accordingly, if nurses in advanced practice are to participate in transforming health care, they, themselves, need to be able to solve problems outside of the traditional mode of thinking. Creative strategies to old problems are necessary to move systems forward. Creativity implies both “thinking and listening outside the box,” using “lessons learned” from a variety of individuals and perhaps allowing for chaos to ensue (for a short time) to develop the best possible solution for health care problems. It is during disorder that new patterns are likely to be developed and self-organized within the system. As self-organization occurs, order will overcome disorder.

Although relationships and creative inquiry are essential elements for nurses in advanced practice to have to understand and manage care within CASs, they must also provide leadership to enhance the development of quality patient outcomes. It is from this understanding that leaders are able to recognize the impact of interactions among health care personnel and appreciate the ability of creative innovation that emerges from the interactions (Burns, 2001). Effective leaders within CASs must expect the dynamic flow of input and provide the means to adapt to each change that comes their way. Leaders must be transformative in their thinking. Transformative thinking implies continuous construction (Davidson, 2010). The work, in essence, is never done. One problem solved will likely generate another.

Ultimately, CASs require thinking that is under “perpetual construction.” In addition to the specialty competencies, graduate nursing students must possess knowledge, skills, and attitudes to function in a profession that is in constant change. To support these changes, characteristics inherent within CASs are developed through the following proposed curricular framework.

**Conceptual Framework**

Several documents guided the framework development for graduate nursing education and include both master’s and doctoral preparation. These documents included the Essentials of Master’s Education in Nursing (2011), the Essentials of Doctoral Education for Advanced Practice Nurses (2006), Nurse Practitioner Core Competencies (2012), Institute of Medicine (IOM; 2001), American Association of Colleges of Nursing (AACN) and Quality and Safety Education for Nursing (QSEN) Education Consortium (2012) initiatives, and the American Organization of Nurse Executives (AONE; 2005). Upon reviewing these documents, key themes emerged from which three concepts were identified. The concepts include relationship-based care, creative inquiry, and leadership. As the concepts emerged from the guiding documents, essential elements from the documents were able to be placed within each corresponding concept (Table 1).

The conceptual framework has three concepts (Figure 1). Although the conceptualization may appear simple at first glance, an understanding of each of the concepts in the context of CASs strengthens the model. Although two of the three concepts are not new to nursing education, the development of all three concepts within CASs provides insight into transformative thinking that may assist with curriculum development and outcome evaluation. The concept of **creative inquiry** is new and has not been developed within the literature.

The concepts of relationship-based care, creative inquiry, and leadership are interdependent and open. All of the concepts are equally important and are not mutually exclusive. Like CASs, all interactions among the concepts are interconnected and interrelated. Each concept is embedded in each other; a change in one concept can result in change to another. For example, creative inquiry may enhance relationship-based care and ultimately change leadership style. This interaction of all three concepts will create novel patterns.

It is expected that each student will enter graduate education with different areas of expertise and goals. As the student progresses through the program, the relationship among the concepts is expected to fluctuate. The model allows for the student to participate and be accountable for their path of learning. Students would be expected to evaluate their knowledge, skills, and attitudes in relation to each of the concepts and determine areas to strengthen. The students in essence would self-organize, meaning that they will alter their behaviors to manage the demands of the environment.

The broken lines represent openness with the surrounding environment. The openness allows for the integration

![Figure 1. Conceptual framework for graduate nursing education. Broken lines and interconnectedness represent openness of the relationship among the concepts allowing for fluidity as students progress through graduate education.](image-url)
of diverse experiences. The diverse experiences define the beginning of the learning continuum for the student and serve as a foundation for further knowledge development. The knowledge that develops could be totally different than what was anticipated by the faculty and/or the students. This supports the concepts of nonlinearity and unpredictability. The students’ knowledge emerges in ways that are unexpected. As each of the concepts within the conceptual model is developed, the students would be expected to cultivate a skill set to navigate and adapt within the health care system.

To further develop the conceptual framework, a concept analysis was completed for each of the concepts. A review of literature was completed that elicited further understanding and defining characteristics related to each of the concepts. This process generated antecedents, concept definitions, and consequences (Table 2). With this work, faculty are able to understand the skill set that could be developed within the curriculum to foster each of the concepts (antecedents) and have a means to understand and defining characteristics related to each of the concepts. This process generated antecedents, concept definitions, and consequences (Table 2). With this work, faculty are able to understand the skill set that could be developed within the curriculum to foster each of the concepts (antecedents) and have a means to measure, via assignments and practicum/clinical experiences, the results (consequences/outcomes). To follow, each of the concepts will be further developed and discussed in the context of complexity.

**Relationship-Based Care**

The ability to engage in and sustain relationships will be vital in order for nurses to function within the current demands of the health care system. It is expected that 32 million previously uninsured Americans will be seeking health care services as a result of the passage of the Patient Protection and Affordable Care Act P.L. 111-148 (2010). With increased numbers of people seeking care, nurses, as strong patient advocates, must be involved in decision making about how to improve the delivery of care. In the evolving health care system, care will be delivered by teams of professionals. To participate in professional teams that employ collaborative strategies to coordinate and evaluate care that is patient centered, competency in effective communication skills that promote team relationships will be needed. The IOM (2011) report, The Future of Nursing: Leading Change, Advancing Health, states that, “nurses should be full partners, with physicians and other health professionals, in redesigning health care in the United States.” (p. 7). The IOM further describes the nurse taking responsibility on teams for identifying patient problems, implementing plans for change and improvement, and evaluating established goals. Both the Essentials of Master’s Education in Nursing (AACN, 2011) and the Essentials of Doctoral Education for Advanced Practice Nurses (ACCN, 2006) identify interprofessional collaboration as an essential competency for performance. Because every nurse engages in relationships at the point of care with patients and colleagues, there is a potential for effective team collaboration that results in positive health outcomes.

We defined relationship-based care as “a transformational interaction that is reciprocal between self and others to influence positive health outcomes” because every nurse is engaged in relationships within complex health care systems. Relationship-based care as a specific model of health care delivery recognizes the power of relationships at every point of care: relationships with patient and family, relationships with colleagues, and the relationship with oneself as a nurse. Every nurse and health care team member maintains the patient and family as the central focus, recognizing that the meaning of illness for the individual is experienced within a unique life story (Koloroutis, 2004; Tesolini & the Pew-Fetzer Task Force, 1994). Developing good communication skills such as the use of empathy is key in therapeutic relationships to help patients experience and express emotions, to help the clinician understand and serve the patient’s needs, and to improve patients experience of care (Beach, Inui, & the Relationship-Centered Care Research Network, 2006). Challenges to creating relationships characterized by empathic understanding are the new demands placed on the nurse’s time with patients that require more focus upon the collection and measurement of information about care processes for quality improvement initiatives. Relational skills that promote positive change through empowerment and staff inclusion in decision making can have a significant impact on the quality improvement process.

**Table 2. Concept Antecedents and Consequences**

<table>
<thead>
<tr>
<th>Antecedents</th>
<th>Concept</th>
<th>Consequences</th>
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<tbody>
<tr>
<td>Self-awareness, capacity for change, communication skills, listening, empathy, respect for self and others, ability to establish and sustain relationships</td>
<td>Relationship-based care—A transformational interaction that is reciprocal between self and others to influence positive health outcomes</td>
<td>Quality of care, collaboration, generative relationships that promote innovative solutions in partnership with patients, peers and organizations</td>
</tr>
<tr>
<td>Critical thinking, appreciative inquiry, deliberative, intuitive, scientific, cultural, artistic, moral, esthetics, personal</td>
<td>Creative inquiry—The iterative application of one or more ways of knowing to expand understanding of phenomenon in question and development of possible solutions for health care issues</td>
<td>Dynamic outcomes, multiple possibilities, the whole greater than the sum of its parts</td>
</tr>
<tr>
<td>Risk taker, self-confidence, self-awareness, visionary, communicator, giving of self</td>
<td>Leadership—The dynamic and complex processes that influence the attainment of quality health care</td>
<td>Change agent, builds trust, empower, motivate, inspire, team builder, navigate health care system, mentor, improve outcomes</td>
</tr>
</tbody>
</table>

**Quality of care, collaboration,**
**generative relationships that promote innovative solutions in partnership with patients, peers and organizations**
Quality health outcomes occur within an environment of care where the standard is respect for each team member's contribution and expertise, where interdependent work is promoted to achieve a common purpose, and where there is acceptance of responsibility to self for continued learning, to engage in creative problem solving, and to provide mutual support (Koloroutis, 2004). All of the antecedent qualities (Table 2) promote what Plsek (2003) calls generative relationships. Generative relationships seek to promote the ideas of others through active listening and trust in another's expertise, laying the foundation for collaborative team work. It is not necessary for all to agree on all aspects of patient treatment but to experience a receptive context where ideas are listened to so that member contributions can build upon and coordinate with other member contributions (McMurtry, 2010). Interprofessional teams make collective decisions, and the responsibility for decisions concerning patients are shared among members. In this decentralized type of interaction, the potential for emergence of innovation occurs when team members can elaborate upon one another's ideas to bring about the creation of collective knowledge. Generative relationships are a consequence of having competent relational skills (Table 2).

Professionals who value self-awareness and who communicate ideas effectively to promote mutual understanding and learning from everyone will be better able to form meaningful relationships with the entire health care team. This self-awareness or relationship with self means having the knowledge and skills to manage stress, articulate needs, and balance the demands of work with self-care. Tesolini and the Pew-Fetzer Task Force (1994) recommend educational strategies to promote introspection and reflection by students such as peer mentoring, journaling, and access to student support groups; listening and observing through exposure to patient stories either through direct care or by reading case studies; experiences for interaction and practice through role-play; and the important experiences with members of a health care team who model an integrated, whole person approach to care. Educators design and promote experiences for students that expose them to leaders who inspire with clarity of purpose and who focus on what matters most: caring and healing at the point of care (Koloroutis, 2004).

Creative Inquiry

Recognizing the complex nature of health care and that health care organizations are CASs, creative inquiry becomes a fundamental principle inherent to the success of the provision of quality care that is safe. CASs are interconnected, interdependent, adaptive, and diverse. Each of these elements require creative inquiry in order for the nurse to be successful whether in the provision of patient care as a nurse practitioner or providing leadership within nursing administration (Lindberg et al., 2008).

Carper (1978) introduced the concept of “ways of knowing” to the nursing world. She postulated that there were four perspectives or ways of knowing within nursing: empirical, esthetic, ethical, and personal meaning. These are presented as ways to obtain evidence in clinical situations. Since then, others have expanded on her work and have added spiritual, psychological, social, financial, indigenous, and even unknowing (the process of unlearning what one assumes to be known and/or being open to what one does not know) as other ways of knowing, to name just a few (Callister & Freeborn, 2007; Cochran et al., 2008; Franquemont, 2009; McCubbins & Marsella, 2009; Paley, Cheyne, Dalglish, Duncan, & Niven, 2007; Zander, 2007). It has become clear that there are many lenses through which to experience, examine, and participate in the nursing profession. The intent of implementing multiple ways of knowing is to allow the graduate nursing student to make better decisions based on expanded evidence. Through creative inquiry, the graduate nursing student enters into the processes within CASs that are interconnected, interdependent, adaptive, and diverse. The nature of creative inquiry is to be open to the various ways of knowing that will allow the student to expand his or her knowledge and explore a wide variety of possible solutions to the problems and decisions that the student must make in their expanded nursing role.

Within nursing education, creative inquiry as a curricular concept emerges as an iterative process used by graduate nursing students and faculty to explore the interrelationships of aspects of patient needs and patient care whether that patient is an individual, family, community, organization, or society. As a concept, it is foundational to what has traditionally been called nursing research or critical thinking and goes beyond those limited concepts to include all aspects of nursing care within the areas of assessment, planning, implementation, and evaluation.

Critical thinking is one of many possible antecedents to the process of creative inquiry (Table 2). It may even include the process of unknowing, that is unlearning that which has been assumed to be known to be open to new possibilities. When these antecedents come into play, creative inquiry can take place resulting in the achievement of dynamic outcomes that may not have been imagined or deemed possible before. Boundaries fall away and endless possibilities can occur (Table 2).

As a creative inquirer, the graduate nursing student recognizes the possibility of other ways of seeing a situation with the intent of understanding the big picture. If upon entering into a patient encounter the student sees only one aspect of the situation, he or she could stop at that point, mistakenly believing the whole situation is understood. Implementing or at least considering multiple ways of knowing allows the student to obtain a broader perspective facilitating better observations, decisions, and interventions than one way of knowing allows. Ways of knowing are meaningless unless the practitioner is open to their possibilities. Interdependence of multiple ways of knowing combined with the use of adaptive methods to integrate both the interconnectedness as well as the diversity that they present results in creative inquiry and has the potential of resulting in expanded potential and better clinical outcomes.
The concept of creative inquiry is defined as “the iterative application (constant movement between observation, action, reflection, and knowledge) of one or more ways of knowing to expand understanding of phenomenon in question and development of possible solutions for health care issues.” The concept subsumes the more traditional concept of critical thinking and is intended to foster the expansion of thinking in the graduate nursing student. As a creative inquirer, these students, be they in a master's or doctoral of nursing practice program, are expected to broaden how they look at the nursing profession as well as their own practice.

The advent of the Future of Nursing (2011) also calls for multidisciplinary action to advance the practice of all nurses to their highest level of education. The act of considering the perspective of other disciplines on a clinical or administrative issue or problem is in and of itself an application of the creative inquiry process. This is combined with the call from the IOM to provide safe, efficient, effective, patient-centered, timely, and equitable quality care. In an era of economic challenge and the implementation of The Patient Protection and Affordable Care Act P.L. 111-148 (2010), creative inquiry will be needed by all health care providers.

**Leadership**

The concept of leadership is one that has evolved over time. Early conceptualizations of leadership included specific attributes that an individual possessed. Historically, it was not about what problem needed to be solved, but who could get the job done. Over time, the concept of leadership expanded to include the context of the organization. Understanding the intricacies of an organization's culture and the interdependent elements within the culture transcends leadership to an increasingly complex concept.

As the complexity of the health care environment is a result of knowledge explosion, expanding technologies, increasing diversity, and global implications, nurses in particular must be equipped with leadership skills to meet these challenges (AACN, 2011). It is within this ideology of the health care environment that the role of the professional nurse will change and continuously evolve. In essence, leaders are attractors (a property that defines a CAS) in that they are catalysts that allow new behaviors to emerge (Chaffee & McNeill, 2007).

The importance of leadership in advanced nursing practice is reflected in both the Essentials of Master's Education in Nursing (AACN, 2011) and the Essentials of Doctoral Education for Advanced Practice nurses (AACN, 2006) documents. Key elements relevant to leadership within the AACN (2011, 2006) and the AONE (2005) include the following: effectively implementing and ensuring accountability for patient safety and quality, developing an understanding of health care delivery systems, and participating in the design and implementation of new models of care delivery based on scientific findings (AACN, 2011, 2006). Although leadership is specifically labeled as an essential in these documents, it is also inherent within the other Essential elements (AACN, 2011, 2006).

The definition of leadership is the “dynamic and complex processes that influence the attainment of quality health care.” This definition of leadership is broad in nature but reflects the key idea that there is constant change as well as many variables that impact the process. It supports the ideas of nonlinearity and unpredictability. Leadership implies utilizing multiples ways of knowing. This means that patterns are assessed and scrutinized across levels with an eye toward the unexpected. Furthermore, leadership embraces the idea of mindfulness in creating and sustaining diverse relationships in order to solve complex health care problems (Anderson, Crabtree, Steele, & McDaniel, 2005). Ultimately this definition supports the AACN's (2011) call for “higher level leadership skills” in nursing education to improve health outcomes (p. 3).

The idea of influence within the definition supports the interdependent relationships that must be developed in order for leadership to emerge. The interaction that occurs within these relationships is often the building block to an innovative solution for a complex problem. Anderson et al. (2005) states that “interdependencies and interactions among the elements will provide critical insights for understanding an organization and system properties” (p. 4). The assistance of others involves a network of relationships that can lead to visionary transactions. Leadership is a process that uses knowledge, skills, and judgment, a process that transforms self and others. With this transformation, there is a “fusion between entities that create unity, wholeness and a collective purpose” (Spross & Hanson, 2009, p. 254).

The dynamic and complex processes within the definition refer to the attributes that the graduate faculty will need to develop and foster in the students within the graduate programs. This means that in order to develop leaders, one must first expose and expand the antecedent attributes related to leadership. The antecedents support the ideas of questioning, uncertainty, and generation of multiple solutions to complex health care issues. Developing leaders require that they emerge from their personal comfort of linear thinking to “outside the box” innovation. As faculty evaluates leadership within this curricular model, it will be the fusion of entities (consequences) that will serve as a measureable outcome (Table 2).

**Conclusions**

It is essential that graduate nursing students be prepared to enter the workforce with the knowledge and skills necessary to engage in practices that contribute to the transformation of the health care system. Given today's health care system and the rapid rate of change, graduate nursing programs will need to be continually revised to keep up with this ongoing transformation. This conceptual framework provides the foundation for the refinement of program outcomes, the revision of existing courses, and the development of new courses. It is believed that the concepts of relationship-based care, creative inquiry, and leadership, as well as the relationship among these concepts, provide a framework that not only informs efforts to revise programs but also offers a vision for future program development. The call to
adequately prepare nurses for advanced nursing practice roles and to function effectively within the evolving health care system is clear. It will be up to the educators to provide the tools to make that happen.

References


