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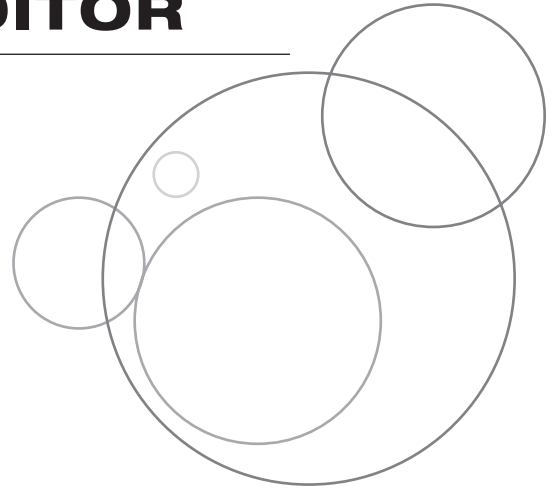
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FROM THE GUEST EDITOR

Creativity and Innovation: Thought and Action

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The purpose of this article is to discuss the significance of creativity and innovation in contemporary health care contexts, and to provide nurses and other health care professionals with models, resources, and ways of thinking about creativity that informs the development of an innovation-action and creative thinking mind-set. As the complexity of health care and nursing escalates, health care providers are challenged to think more creatively and develop innovations that advance the knowledge, learning, and service contributions of their discipline to the health care enterprise. Nursing requires creative thought and innovative action in service of the greater good.

Thirty years ago, my PhD dissertation research was on self-regulation of creative thought in nursing (Pesut, 1984). My initial research focused on individual nurses' self-perception and enhancement of their creativity. I reasoned that science presupposes creative thought, and that if nurses could develop their creative thinking skills, nursing as a profession might accelerate the generation of strategic research questions and knowledge work necessary to test, support, and advance the evolution and development of nursing knowledge and nursing science (Pesut, 1984). I was curious about the degree to which nurses perceived themselves as creative (Pesut, 1988).

It made sense that most creative thinking strategies, tactics, and techniques were heuristic devices or tools that helped people think about their own thinking and develop their creative thinking abilities. Acting on my curiosity and interests, I created and evaluated a creativity training program for practicing registered nurses using concepts, theories, and principles from the literature on creative thinking, self-instructional cognitive behavior modification training, and research in the area of metacognition. My research revealed that, through focused attention to self-monitoring, self-evaluation, and self-reinforcement, nurses can self-regulate creative thought. Intentionally helping nurses master specific strategies, tools, and techniques that support the development of self-perceived creativity resulted in significant differences on tests of creative thinking. My doctoral research served as the foundation of my scholarship, and I continue to develop ideas about the relationship of metacognition to critical and creative thinking that supports clinical reasoning in nursing (Kuiper, Pesut, & Kautz, 2009; Pesut, 1990; Pesut, 2008; Pesut & Herman, 1999).



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In order to be creative one must first master the thinking of one's discipline. This involves being with the best, speeding up work, moving beyond fundamentals, and building a foundation of knowledge and expertise.

There is a need to resurrect and champion the teaching and learning of creativity technologies to support and augment the development of creativity and innovation in contemporary health care contexts among groups and teams in organizations. It is important to activate the creative thinking skills of health care providers to redesign health care systems and improve patient care experiences (The Joint Commission and Institute for Health Care Improvement, 2012; Napier, 2008; Von Stamm, 2008).

Creative thinking is “a *metacognitive* process of generating novel and useful associations, attributes, elements, images, abstract relations or sets of operations—that better solves a problem, produces a plan or results in an outcome, pattern, structure or product not clearly present before” (Pesut, 1985, p. 5). Napier and Nilsson (2008) suggest there are three disciplines necessary to promote creativity and innovation. The first is *within-discipline thinking*. They argue that in order to be creative, one must master the thinking of one's discipline. This involves being with the best, speeding up work, moving beyond fundamentals, and building a foundation of knowledge and expertise. The next essential ingredient in mastering the art and science of innovation is *out-of-discipline thinking*. Creative ideas often come from outside one's own field of expertise. Novel associations often result in new insights and creative ideas that can evolve into innovations. Third, these authors suggest the need for a *disciplined process* to support creative thinking and the development of innovations.

Teachers and educators as well as coaches and consultants help people master within-discipline thinking while encouraging them to become aware of out-of-discipline thinking and providing structures and processes that enable clients to manage their own creative thinking processes through the application of creativity models, methods, and techniques. The following discussion highlights some models and methods of creative thinking that individuals may find useful in their work as teachers, coaches, and consultants. Best practices for leading innovation and essential skills that leaders need to create and influence the future are highlighted. Internet-based self-assessments are identified so that readers can conduct a self-assessment of their innovation profile and rate themselves on future leadership skills.

MENTAL LOCKS AND MODELS OF CREATIVE THINKING

Creativity consultant Roger Von Oech (1983) identified ten mental locks—beliefs that serve as barriers to creative thinking.

- A belief that there is a right answer to problematic situations.
- A need for logic to everything.
- An affinity for following rules.
- A preference for being practical.
- A tendency to avoid ambiguity.
- A belief that making mistakes is wrong.
- A belief that play is a frivolous activity.
- A “That's not my job” attitude.
- Not wanting to appear foolish.
- The self-perception that “I'm not creative.”

As one ponders these mental locks and thinks about the current emphasis on evidence-based practice in health care, it appears that an evidenced-based mental model may not provide the opportunities, time, space, or resources needed to champion creative dialogue and/or a design thinking mind-set that supports innovations needed to enhance quality improvements in health care. There is a need for *both* an evidence-based mental model *and* a creative thinking mind-set, given the challenges health care providers face today. People in the health care industry need models and methods of creativity, as well as practice in design thinking (Brown, 2009), to challenge the status quo and employ the behavioral and cognitive skills required to support the future of innovation (Von Stamm & Trifilova, 2009) and produce innovative ideas to transform our health care organizations. The industry needs individuals to activate and self-manage their knowledge, skills, and abilities as Dreamers, Realists, and Critics (Dilts, Epstein, & Dilts, 1991) and as Explorers, Artists, Judges, and Warriors (Von Oech, 1983).

MODELS OF CREATIVE THINKING: DREAMER, REALIST, CRITIC, EXPLORER, ARTIST, JUDGE, AND WARRIOR

Dilts et al. (1991) offer an interesting model for the dynamics of creativity and innovation efforts. They suggest that each of us can learn to coordinate and self-regulate our Dreamer, Realist, and Critic “parts.” Our *Dreamer* part is responsible for establishing new goals and outcomes. Dreamer parts create and establish the “what” of a desired state. Dreams are future-vision oriented, with long-term goals in mind, modulated by an internal frame of reference moving toward a desired outcome. Our *Realist* part implements and accomplishes new goals and outcomes. The Realist asks “how” questions and is action oriented and present-time oriented, attending to the external environment in service of plans and action steps to support the Dreamer. The *Critic* part is concerned with establishing criteria about what works and what does not work and how these criteria are used to evaluate progress toward goals or outcomes. The Critic poses “why” questions and is concerned with logic and the long- and short-term consequences of a project. The Critic relies on history and future implications, often in service of moving both away from and toward a desired goal or outcome after evaluation of the risks and advantages. Becoming aware that each of us has within us a Dreamer, a Realist, and a Critic is a useful insight. Some of us may have more Dreamer than either Realist or Critic. Perhaps some have too much Critic, which can squelch dreams and innovations. What would you say is the proportion of Dreamer, Realist, and Critic in your experience? It is better to manage than to be managed by these “parts” of ourselves. Self-authoring change agents manage their Dreamer, Realist, and Critic parts effectively.

Roger Von Oech (1983) observes that successful creative people have the cognitive and mental flexibility to enact four roles that support a creative process. His model of creative thinking invites people to consider to what degree they take on the role of Explorer, Artist, Judge, and Warrior. *Explorers* search for new ideas, experiences, and information. The Explorer is an experience seeker who values harvesting knowledge from social and knowledge networks. The *Artist* then takes the information from the Explorer and combines, sifts, sorts, and rearranges the information in new and different ways. The *Judge* then evaluates the new ideas and refines them based on risk analyses and past experiences contrasted with desired

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results. Finally, when action is needed to turn ideas into realities, the *Warrior* is activated. Think of a time when you were particularly creative—How did you enact and embody the roles of Explorer, Artist, Judge, and Warrior in that situation? In addition to self-managing these “parts” and “roles” linked with the creative process, there is another dynamic that supports directed creativity efforts.

PRINCIPLES OF DIRECTED CREATIVITY: ATTENTION, ESCAPE, AND MOVEMENT

Paul Plsek (1997) makes the case for bringing creativity and innovation into quality improvement efforts in health care. Plsek (1997) defines creativity as “. . . the connecting and rearranging of knowledge—in the minds of people who allow themselves to think flexibly—to generate new, often surprising ideas that others judge to be useful” (p. 28). “Innovation is the first, practical, concrete implementation of an idea done in a way that brings broad-based, extrinsic recognition to an individual or organization” (Plsek, 1997, p. 29). He notes five factors that drive the need for creativity and innovation in organizations today:

- Superior long-term financial performance is associated with innovation.
- Customers are demanding innovation.
- Competitors are getting better at copying past innovations.
- New technologies enable innovation.
- What used to work doesn’t anymore.

Plsek synthesized the literature on creativity and innovation, and contends that there are three basic principles behind all methods for creative thinking: attention, escape, and movement. The first principle of directed creativity is *attention* to the elements in a situation. This involves close examination of the features, attributes, and characteristics of the current reality, including discernment of the assumptions, patterns, and paradigms that hold our mental models of the current reality in place. Using metaphors and analogies and paying attention to what works and what does not work helps to expand one’s perspective beyond the usual focus of attention. Attention enables us to understand how things are done and to appreciate the reality of a situation with an eye toward understanding and appreciation of what is.

The next step in the creative process is to *escape*. As we imagine a creative alternative to what is, we have to escape the current mental models and patterns that hold a practice, situation, policy, or structure in place. Escape requires exploration and release from current mental patterns, time, place, premature judgments, barriers, rules, and our past experiences. Intentional use of creativity technologies supports this kind of escape and prompts the development of new associations based on contrasting a past or current state with a desired future.

Once we escape old, habitual ways of thinking and responding, as well as patterned mental models, new associations are created and we are free to engage in *movement*, which is the process of exploring and connecting thoughts. Brainstorming is an example of a creativity tactic that generates movement by building on ideas, creating novel associations that may or may not be useful, and enabling other points of view to emerge as people connect and rearrange the knowledge in their heads—potentially resulting in new, surprising, useful ideas.

One tactic to stimulate creative thinking is considering the opposite of the phenomenon at hand. For example, what is the opposite of nursing? The opposite of nursing is negligence.

THE COMPLEMENTARY NATURE (TCN) AND THE SQUIGGLE SENSE (~)

Throughout history, people have been fascinated with the notion of the duality and contrary aspects of issues from a practical, scientific, and philosophical perspective. Thinking of things as contrary or opposite often leads to polarized debate and discourse about either/or, right/wrong thinking and reasoning. Another approach to gaining insight and developing creative thinking is to develop awareness of and gain insight into the complementary nature of phenomena. To some degree, creativity is the ability to reconcile opposites and appreciate the coordinated dynamics associated with the complementary nature of opposites. In fact, one tactic to stimulate creative thinking is considering the opposite of the phenomenon at hand. For example, what is the opposite of nursing? The opposite of nursing is negligence. Thus nursing ~ negligence is a complementary pair that, when considered together, evokes some creative responses and hopefully activates a call to action and innovation.

Scientists Scott Kelso and David Engstrom (2006) have proposed that our brains are wired to discern the complementary nature of experience. The complementary nature is defined as “a set of mutually dependent principles responsible for the genesis, existence, and evolution of the universe relating to or suggestive of complementing, completing, or perfecting relationships and being complemented in return” (Kelso & Engstrom, 2006, p. 39). Examples of complementary pairs include the following: Mind ~ Body; Conscious ~ Unconscious; Individual ~ Collective; Organism ~ Environment; Anabolism ~ Catabolism; and Either/Or ~ Both/And perspectives. Rather than frame the world in terms of duality or contraries, Kelso and Engstrom argue that contraries are really complementary pairs contained within a greater whole. They suggest that understanding and valuing the complementary nature of phenomena leads to reconciliation of opposites and promotes insight and understanding of the coordinating dynamics of self-organizing creativity activities. They propose using the tilde (~) as a new symbol to represent the complementary nature of paired phenomena. They have even begun developing a Complementary Pair Dictionary to encourage and invite dialogue and research into the nature of complementary interactions and effects. They note that reconciliation of opposing aspects is easier said than done. They provide scientific insights into ways to deal with polarization and reconciliation through creation of a new vocabulary, a symbolic representation system, a philosophy, and an understanding of coordinated pattern dynamics.

The philosophy of complementary pairs seeks to recognize their historical significance, acknowledge them as a valid subject ~ object of contemporary research, and provide a nomenclature as a means to reconcile basic interpretations of complementary pairs on scientific grounds. Complementary pairs are dynamic, and reconciling them means harmonizing and bringing together that which has previously been considered incommensurate. The complementary nature helps frame and understand the dynamics of competing values in service of creative thinking and purpose-driven innovation.

INNOVATION AS ACTION: NEGOTIATING COMPETING VALUES

The Competing Values Framework (2013) is a model that helps people understand the tensions and polarities between and among the variables of being flexible versus focused and attending to the internal versus external environment, and the

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importance of aligning people, practices, and purposes in service of a greater good or organizational goal. People have propensities for these different areas and have a style or type that can be categorized as a proclivity to create, compete, control, or collaborate in organizational innovations. Creative types have their eye on the external environment and want to do things *first*. Competitive types want to do things *fast*. Control types who value efficiency and quality want to do things *right*. And collaborative types want to do things *together*, building knowledge and community. The competing values framework suggests that creativity and innovation are about the alignment of people, practice, and purpose.

Knowing and appreciating one's strengths and preferences for creating, competing, controlling, and collaborating is another part of a creative thinking mindset and innovation action orientation. Appreciating the contributions of self and others at the individual, team, and organizational levels in regard to competing values fuels creativity and innovation efforts. DeGraff (2011) offers a unique program and four steps to jump-start personal innovation development.

1. Rethink innovation.
2. Revise your approach with prismatic thinking (the lens and colors of the competing values model).
3. Run your experiments.
4. See the whole journey.

Innovation You (2013) is a website that offers a free individual assessment that provides a profile of the degree to which a person and his or her community of interest are aligned in terms of the competing values orientation of creating, competing, controlling, and/or collaborating. The profile provides individuals with guidelines and practical considerations about how to realize creative goals and develop a creative and innovation mind-set. Dyer, Gregersen, and Christensen (2011) developed a personal Innovator's DNA Assessment, which is available for a fee. Finally, DeGraff and Quinn (2007) generated a list of eleven best practices for leading innovation efforts in organizations. This list is contained in DeGraff, J., & Quinn, S. (2007). *Leading Innovation: How to Jump Start Your Organization's Growth Engine*. New York, NY: McGraw Hill, and is reproduced with permission of the McGraw-Hill Companies.

1. **The Cavalry isn't coming.** Stop waiting for the corporate innovation departments and functions to make innovation happen where you work. Remember, innovation is so much more than just better products and services. Innovation requires ownership and self-authoring behavior. If you don't demonstrate it, who will?
2. **One size doesn't fit all.** Innovation requires constructive conflict. Instead of avoiding the tension of differing points of view, encourage diversity and balance in staffing, launching, managing and harvesting innovation.
3. **Develop a community of highly practiced Creativizers.** Ordinary people do most of the extraordinary innovating in an organization. Find your pro-innovation constituency, and energize and organize them. It's through these informal communities that innovation works its way through the system, everywhere, every day.
4. **Create more ugly pots.** The best way to make a beautiful vase is by making a lot of them that turn out ugly. It's through doing that we learn. Innovation is a process of attrition. There is no way to avoid the failure cycle, so acceler-

ate it and expect to fail often and early, but remember to keep out of sight until you have something stunning to show.

5. **Hide inside Trojan horse projects.** Leaders love to talk about innovation, but no one really “owns” it, so no one really wants to pay for it. What leaders do understand are projects that have deadlines, goals, and budgets. Instead of attempting to get buy-in for a heroic “innovation project,” hide your innovative approach inside an existing project of importance to some key senior leaders. You will quickly learn what works and what doesn’t.
6. **See one, do one, teach one.** You would not want someone to operate on you who only read about surgery in a textbook. Learning requires doing. Who are your most practiced innovators? Apprentice yourself to them. Who are your least practiced innovators? Coach them. It is only through the development of innovation competency that your growth and that of your team is sustainable.
7. **The 20/80 rule.** It’s easier to change 20 percent of the firm by 80 percent than to change 80 percent of the firm by 20 percent. People really change when they are in crisis (10 percent) or on a roll (10 percent). So launch your most radical innovation in this 20% of the company where the reward of innovation is enhanced and the risk is reduced, and move quickly from the outside in.
8. **Diversify when you don’t know your destination.** Every stockbroker knows that you optimize your portfolio of stocks when the market is clear and predictable and that the market is never that way, so hedge your holdings. Innovation is about the future for which we have no data. So it’s best to diversify your projects and approaches to innovation to increase your probability of success while minimizing the risk.
9. **Show, don’t tell.** Innovation is about what doesn’t really exist today. Try explaining something abstract and unusual to someone, and you are likely to get a plethora of questions and puzzled looks. On the other hand, make a mock-up or a short video or a diagram of something new, and people get it. Most people don’t support innovative ideas because they don’t understand them. Job one is helping them understand what “it” is.
10. **Innovation only pays in the future.** Innovation is like a child. It needs time to grow and develop. You invest in it so that it grows up well and is productive and useful in the future. Children aren’t born as fully formed adults and can’t be treated as such. Similarly, innovation takes time to develop before it matures into its full value.
11. **Leave room for the emergent stuff that you don’t know now.** If your innovation turns out exactly as you had planned at the beginning of your journey, you learned nothing along the way, and probably missed most of the real value in developing opportunities. Sometimes what you discover along the way is more interesting than what you set out to find. Be mindful and vigilant for new and emerging insights.

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LEADING INTO THE FUTURE: DEVELOPING A CREATIVITY AND INNOVATION MIND-SET

Robert Johansen (2012) underscores the importance of many of the ideas discussed in this article. He believes that leaders must make (create) the future. There is an essential skill set that leaders must develop to realize the futures they want to create. Creative

thinking, an innovation mind-set, attention to competing values, and clarity about the complementary nature of phenomena are embedded in his suggestions about the most important skills leaders need to navigate into the future. Individuals can rate themselves on the following ten future leadership skills. See *Readying Yourself for the Future* (2013) to assess yourself on these essential leadership skills and abilities.

- A maker instinct: the ability to activate, build, and connect with others to remake organizations.
- Clarity: the ability to see through complexity and distill the essence of issues in complex situations.
- Dilemma flipping: the ability to turn dilemmas into polarities that need to be managed instead of problems that need to be solved.
- Immersive learning: jumping into experience to learn from a first-person perspective.
- Bio-empathy: the ability to see things from nature's point of view and to understand, respect, and learn from nature's patterns.
- Constructive depolarization: the ability to calm tense situations and to positively engage people even when differences are apparent.
- Quiet transparency: the ability to be open and authentic without self-promotion.
- Rapid prototyping: the ability to create versions of innovations realizing that future success depends on early failures.
- Smart-mob organization: the ability to create, engage, and link purposeful business and social networks.
- Commons creating: the ability to seed, nurture, and grow shared assets that benefit others and allow competition at other levels in a system.

SUMMARY

The purpose of this article is to stimulate thought and dialogue about the value and importance of creative thinking and innovation in health care. Directed creativity requires focused attention and escape from routinized thinking patterns so that people can move in new directions. Innovation requires navigation of competing values and appreciation of the complementary nature of phenomena. Appreciating and coordinating the dynamics between and among multiple stakeholders within and outside of one's discipline leads to new associations and creative insights that are actionable as innovations. Leaders of the future need to build community and engage people in sharing ideas and insights that involve respect for an evidence-based mind-set and for the value that creativity and innovation can contribute to the transformation and evolution of the health care enterprise.

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