The scope of change in health care has been enormous, and the rate at which change occurs continues to accelerate. Today’s technology and therapeutics were inconceivable even a few decades ago. Over time, the growth of the health professions has been influenced by those new technologies and therapeutics, but there are many other influencing factors and forces, including, but not limited to:

- The appearance of new diseases, such as swine flu (H1N1), HIV/AIDS, and Lyme disease and the rapid growth of new treatments, medications, and noninvasive surgeries.
- War and its consequences, which brought new techniques to care for burns and radiation, growth of the use of penicillin and other antibiotics, treatments for posttraumatic stress syndrome, growth of nursing, and rehabilitation services in the military and veterans’ systems.
- Sociocultural issues, including the civil rights movement, the feminist movement, the consumer revolution of the late 1960s and 1970s, and changing immigration and demographic patterns, which brought dramatic changes in maternity care ranging from shortened length of stay to sibling visitation, increased focus on care of the elderly, and end-of-life care. Diversity has increased in healthcare education and practice, and more emphasis has been placed on culturally competent care.
- Religious issues, which brought ethical components of care and the development of parish nursing.
- Changing economics as evidenced by the recent recession and political/legal issues, which brought us Medicare, Medicaid, managed care, legalized abortion, and the current debate over healthcare reform, even though a bill was passed in Congress and signed by President Obama.
Changes in education that brought nursing into academic settings and gave rise to nursing science and nursing research, thereby changing practice and creating new roles, such as advanced practice nursing and the newest credential, the doctor of nursing practice (DNP). Physical therapy embraced the doctor of physical therapy (DPT) as an entry-level degree, and other health professions have developed and evolved as well.

These forces are not isolated but are part of the total environment in which we live and work. They are ever changing and interacting, challenging health professions educators to keep on top of the trends, technologies, and resources, while enabling self-directed student learning. Graduates who are self-directed learners understand and are responsive to healthcare system changes when they are in practice and out of the school setting, where there are no faculty members with whom to consult.

Healthcare educators straddle the fields of healthcare practice and education. They need to be knowledgeable about changes in practice and technology in both fields. What healthcare practitioners learn, as well as how they are taught, must keep pace with the changing milieu. The field of education has also changed over the years through many of the same forces that affected health care. Technology and therapeutics in health care can be compared to a new understanding of learning theories and teaching methods in education. The student entering a healthcare profession from high school today is most likely much more comfortable with the use of computers than the RN returning to school or an older student who has chosen a health profession as a second career. Online courses are now in the mainstream. Health professions classrooms are also more culturally diverse than ever before. More men are entering the nursing profession, and more women are going to medical schools. Younger students may have had very different cultural experiences in their secondary schools than did older students. Older students may be dealing with the added stress of parenthood and job responsibilities. Different cultures and experiences may produce different expectations of teaching and learning. Respecting learning-need differences and establishing an innovative climate in the classroom can help to prepare students for the changes they will face in practice. An educational climate that values different viewpoints and experiences among students encourages those students to create their own innovations. Those innovations will serve them in good stead by enhancing positive interactions with the wide variety of persons for whom they will be caring and with whom they will be working.

Omachonu and Einspruch (2010) saw four areas of potential innovation in health care: product innovation; process innovation (which includes healthcare practices), marketing innovation, and organizational innovation. There are many new opportunities for innovation. Sources of information have multiplied. The Internet has laid at our doors the possibility of learning over long distances. The barrier of geography has been breached. Even nurses in rural communities have access to continued learning by highly qualified nurse educators. Innovative computer-based materials can provide technical training within the classroom—audio and video...
combining to offer a breadth of exposure previously available only through many hours at the bedside. Instant messaging is available, and we can listen to lectures over podcasts and locate reference material instantly through our very own personal digital assistants (PDAs). We can have two-way access between health settings and homes with the use of Skype, a software application that provides the ability to make voice calls, complete with pictures, over the Internet, and telemedicine, so a person many miles away can join you in your living room or in a health facility. The use of simulators has increased. This capability is becoming much more important as productivity pressures make clinical sites for student experience harder and harder to find.

How do we teach more and more information to our students without overwhelming them? And how do we maintain the underlying paradigm of care and compassion? How do we maintain the threads of patient-centered, holistic, and compassionate care within the complex scientific information our students must master? In this text, we hope to provide health professions educators with ideas and examples that have been used to allow students to master the facts and theory as well as the perspective of a caring professional. Implementing and adapting these methods will lead to further discovery of successful teaching strategies to keep pace with changes in the profession.

Examples of Innovation

Innovative teaching strategies can range from simple to complex. Innovations can be developed for an exercise within a course or for the method by which the entire course is taught. Teaching innovations can be developed for whole programs or even whole schools. They can be developed by one faculty member or by groups of faculty members. The prime objective is that the teaching strategies selected must address what needs to be learned in relation to the learning needs of students.

Think back to a favorite teacher or any strongly remembered event. Why does it stand out? What makes it unique among similar events? A major factor can be the realization that one object was completely different or out of its usually defined place, whereas the surrounding objects appeared normal. The teachers we remember often stood apart from our perception of others by only one or two details, but these details were out of the normal range. We remember the different much more than the normal, yet we can grasp only a small amount of the different and a large amount of the usual. The occasional nondigestible, completely different piece in the sea of the expected focuses our energies on analyzing not just the different piece, but also the other 99% rote material normally not given much attention and easily forgotten. Kirp, a professor of public policy, asked a former student, who had become a college professor, what she remembered about his teaching. He was astonished to hear that she remembered his baseball stories. She elaborated that the baseball anecdotes prodded her into thinking of him as more approachable and more human. Once she felt that way, she began to pay attention (Kirp, 1997).
Exhibit 3-1 provides an example of using something different in a lesson: an analogy of pain management to the sinking of the Titanic. The objective is to allow students to discover how what they know applies to other situations. Students will remember more if they can make the discovery.

**Exhibit 3-1 Analogy: Pain Management and the Sinking of the Titanic**

The aftermath of bone surgery, such as ankle fusion, is very painful for patients. To create a more dynamic understanding of a patient's experience with pain and the need for appropriate pain relief measures, an analogy was used to discuss the issues involved. The choice of the Titanic disaster as an analogy actually came from a patient's description of the pain he felt in the postoperative period and his feeling that the nursing staff needed to pay more attention to pain relief. He felt there were times when he was totally immersed with the pain, and relief could have been started sooner and put him on a more even keel.

The Titanic was constructed with six watertight compartments that were expected to withstand a breach and keep the ship afloat. The compartments had very high walls but, unfortunately, did not reach the ceilings. The design was appropriate for most possibilities, but not for the accident that actually happened. Students were told to think of the walls as the job of the pain medication and water as the pain. The wall of the pain medication isolates the water from the ship and the passengers' realization that they are surrounded by water. The pain is hidden. The danger lies in what happens if the water in the first compartment overflows its limit and then starts filling the second compartment. If up to three of these compartments fill with water (pain), it may not interfere with the ship’s normal function; however, as the effect cascades into more of the compartments, the ship sinks by the bow until it’s “all hands lost.”

Patients initially don’t understand that a sea of pain surrounds them. As the pain relief diminishes and they suddenly (perhaps by waking from sleep) find themselves immersed, a fear of this unexpected and uncomfortable situation is formed. This fear becomes a constant presence even after pain relief is restored, leading to anxiety and apprehension over the possibility of a repeat experience. In very painful procedures, this fear can result in clock watching over the medication schedule as well as a compulsion to do anything to stay ahead of the pain curve. Appropriate pain relief measures, timing of administration, and other nursing measures can be discussed, continuing use of the analogy (such as the use of lifeboats in the pain relief cycle). Students can also be taught to develop and share their own analogies to improve learning retention.
Art, literature, storytelling, humor, and technology-assisted learning can all be used in innovative ways. Whitman and Rose (2003) had students choose media to express their nursing philosophy. This technique required students to think differently about what they were doing and what they believed. One student used a guitar and song to express his philosophy of healing. Another painted a brain within a heart, which symbolized her need to incorporate compassion as well as intellect into patient care. A third wrote a poem to express her feelings and beliefs. This technique used sight, touch, and movement in addition to listening, which encouraged retention postclass for both the creator of the piece and the viewer.

■ Developing Innovative Strategies

Innovation can occur at all levels of an educational organization. Support for innovation in education may begin at the top of the organization or be developed and implemented at program or individual class levels. Success is enhanced when administrators and faculty members work side by side to plan strategically and implement changes to improve the educational milieu (Woods, 1998).

Innovation at the school level was demonstrated by a group of business school educators. These educators chose to focus more on entrepreneurship and to move away from the traditional management that prepared students to work in large organizations. This strategic innovation recognized the realities of the marketplace in a changing world. These schools set the pace for others to follow (They Create Winners, 1994). In working with social workers, Michael Chovanec (2008) recognized an educational need that wasn't being met. While group processes may be in the curriculum for social workers, they often need to work with involuntary groups, such as court-ordered programs in domestic abuse and chemical dependency. There is a very different process needed to work with people who do not want to be there but are forced to attend. Chovanec developed three innovative frameworks to teach social work students about this type of work. His article describes those frameworks as reactance theory for working with the reactions of those who do not want to be in the group, a stages of change model, and motivational interviewing, which encourages working with clients to improve their self-motivation. His model provides guidelines and exercises to model unpleasant experiences that students may be exposed to in their practice.

Nursing education has grown through innovation. Mildred Montag's introduction of the associate degree program in nursing, developed through research to meet an assessed need, changed the landscape of nursing education. The introduction of nurse practitioner programs also created a revolution in the profession. The physical therapy profession has endorsed the doctor of physical therapy (DPT) as the entry-level degree and strongly encouraged schools to provide transition programs for physical therapists currently in practice. The introduction of distance learning in all the health professions is the latest revolution and is growing rapidly, offering students different choices that are unfettered by the barrier of geography.
The Innovation Center for Medicare and Medicaid was established as a consequence of the passage of the Affordable Care Act (CMS Innovation Center, 2013). Trossman (2012) noted that nursing was long governed by rules, regulations, and rigid schedules, but times are changing, and 21 nurses were among the 73 healthcare professionals who were selected as innovation advisors in December 2011 through the CMS Innovation Center.

Successful innovation does not come easily and requires creativity, planning, and evaluation. Exhibit 3-2 describes a process for educators to work through to develop innovative teaching strategies. Just as health professions call for patient assessments, the educational process calls for learning and program assessments. Assessment of a course requires a look at both strengths and problems. How can the strengths be

### Exhibit 3-2 The Process of Innovation

#### Assessment
- What is the content to be learned? What are the student learning needs? How are those needs being met? What is working and what is not?

#### Defining Options
- How else can I look at this? Does the literature provide suggestions that would address the identified needs? Do students or other faculty members have suggestions that I could utilize?

#### Planning
1. Does this change require working with curriculum committees, collaborating with other faculty members, or individual instructor planning? How should this change be approached?
2. Will there be a need to work with technical specialists in the use of computer technology? Do I need additional technological knowledge to carry out this change?
3. How can I best use change theory in this planning? Who are the stakeholders who need to be considered? How and where will I meet resistance? How will I develop support?
4. How will I plan to evaluate the effectiveness of this innovation?

#### Gaining Support for the Innovation
- Which resources will be needed? How will they be acquired and funded? What is the level of administrative support required and available? Which strategies will I use to gain additional support if needed?
enhanced? What needs to be changed? Educators must focus on what the expected learning outcome should be, with awareness of learning theory and student learning styles and needs. Specific content requirements change often in health care, as new techniques, technologies, and research bring new knowledge needs. With the overwhelming amount of information available in today's healthcare world, it will not be possible to include everything students need. They will need to have appropriate resources to supplement classroom or clinical learning. The instructor must decide what and how much content will be needed, a decision that is often difficult. While addressing the content to be learned, it is also important to consider student learning needs. An understanding of the diversity in learning needs provides a foundation for the development of effective strategies.

To define options, the literature should be searched for research, suggestions, or techniques that could address the identified needs. Asking students or other faculty members for suggestions can also be helpful. This is the place where creativity reigns. It is important to look at many different ways to address the learning objective before selecting one. Asking the question, “Is there another way to look at this?” can be fun and lead to additional options.

Once a strategy has been selected, planning is all important. Understanding who the stakeholders are and what their investment is in the status quo or in change can be helpful in planning strategies to bring them on board. Many stakeholders, including students, do not like change and will resist new approaches. Using change theory
can assist in demonstrating need and provide information that can make resisters more amenable to change. Some strategies will require curricular change, which is a complicated process and one that needs to be started early to avoid implementation delays. It is important to take enough time to develop support for the strategy. If this is a simple change within a course, then the instructor will need the support of students to participate effectively and not sabotage the effort. In more complex strategies, it may be important to bring in other faculty members or administrators. Some strategies will need help from technical specialists, who may be able to offer support and/or instruction for using the required equipment. Time must be allotted for adequate instruction to enable faculty members and students to reach a comfort level. Most importantly, the technical staff must be available to help solve problems, which are bound to occur. Planning strategies for troubleshooting and providing access for problem solving for both faculty members and students need to be thought out in advance of implementation.

Another phase of the planning process is planning for the evaluation of the strategy. This is the time to decide what needs to be evaluated and how it should be done. This phase can range from how the strategy will be used in student grading to evaluating learning outcomes for the class as a whole and needs to be developed to allow student and faculty input for future development. This can also be the time to develop an educational research project, if appropriate. Educational research and publication of results are needed and can assist all of us in understanding and applying an effective educational process.

**Gaining support for the innovation** is the next step. Some strategies require little or no resources to implement, whereas others require significant physical and/or financial resources. If resources are needed, then gaining support for acquisition of those resources is essential. Looking at alternative sources of funding is helpful. Grants can provide a good funding source but require time and effort to secure and may last for only a limited time. Administrative support may be required, but administrators may also be an excellent resource to tap to discuss potential funding or acquisition of physical resources. Once the project has been developed, it is important to validate the support of stakeholders.

Class preparation is a given in education. **Preparing students for the innovation** is an important step. Student instructions need to be clear and specific. This is the time for motivating students to want to try this process, and for gaining their support. Students need to know how to address problems, especially when technology is involved. There may be a learning curve required with some strategies. Students need to feel comfortable that they will not be punished for mistakes, but rather will benefit from those mistakes as part of the learning process. Evaluation methods or grading must be made clear.

**Faculty members may also need preparation for the innovation.** For some strategies, rehearsal time may be needed, or additional education may be required. Planning sufficient time for those activities will increase everyone’s comfort level.
with the process. This is the time to be sure that everyone agrees about how the strategy will be run. Use of perception, validation, and clarification (the author likes to use the mnemonic PVCs when teaching students about this) can be valuable here. Health professionals are familiar with cardiac premature ventricular contractions as PVCs, but using this term in a different context can help students relate to the term and remember it better. Too often, people interpret statements differently. Checking that everyone has the same perceptions (validating) and clarifying differences can provide unity in approach to students and reduce problems of students playing one instructor against another. Saying, “Remember your PVCs,” reminds us to think about this issue.

The best part of the process is implementing the innovation because it makes the innovation real for the innovator. It is hoped that things will go well, but flexibility may be required if problems arise. Sometimes, unintended consequences, such as surfacing of emotional issues, can occur. Instructors should be alert to the need for follow-up or referral if problems arise.

Evaluating the outcome is the final step in the process. Remember that learning can continue long after implementation of the strategy. It may be possible to measure short-term attainment of learning outcomes, but it may or may not be possible to explore long-term effects. For certain strategies that were developed to provide a foundation for other learning experiences, it may be possible to remeasure students at the end of their program. Students and faculty members should be able to provide input for future development and use of the strategy. A strong evaluation process provides an opportunity to participate in educational research. Even if a strategy is not suitable for research, it still may be appropriate for publication. Sharing teaching strategies presents the opportunity to improve the educational process. A catchword in health care today is evidence-based practice. We also need evidence-based practice in education.

Conclusion

Innovative teaching strategies must be based on both learning objectives and student learning needs. The wide diversity of student learning needs means that educators must recognize that, although most students will benefit from the new approaches, some will not. This perspective can be disappointing, but it is realistic, and educators must take pride in what they have accomplished. Problems that no one could foresee will occur despite adequate planning. These problems, although disturbing at the time, are often humorous memories later and can be addressed to improve future offerings. Developing effective teaching strategies is challenging and requires effort and persistence but can also be exceedingly rewarding and fun. Sharing those strategies with others will benefit students and faculty alike. We hope you will take advantage of the strategies presented in this book and go on to develop, implement, and share your own innovative strategies.
An example of an innovative strategy at the school level was the introduction of interdisciplinary case studies to health professions students. Healthcare providers interact daily with members of other disciplines. The mission statement of the health professions school, with programs in nursing, physical therapy, and communications sciences disorders, included the following:

While health professionals must be prepared to provide expert care within their respective disciplines, they contribute to evaluating and improving health care delivery by working in close cooperation with professionals from other disciplines. Students educated in an interdisciplinary setting, one that integrates academic and clinical pursuits, will be well-equipped to function as members of the health care team. The involvement of active practitioners from different fields in program planning, student supervision, and teaching supports such an integrated program. (MGH Institute of Health Professions, 2000, p. 13)

Faculty members and administrators felt the need to strengthen the manner in which that portion of the mission statement was being addressed. Although students were exposed to a few multidisciplinary courses such as research and ethics, there was overall agreement that they needed more useful exposure to other disciplines within a clinical context. An interdisciplinary faculty task force was developed to explore possibilities. The academic dean staffed the task force and provided administrative support. After much discussion, the task force settled on a series of four required interdisciplinary clinical seminars as the preferred method.

The mechanics of developing and implementing the program were daunting, but the group was committed to the project. They enlisted other members of their departments to develop four case studies—one for each seminar. The subject of the case study would require care from each of the three disciplines—nursing, physical therapy, and speech pathology. Thought was given to the need for students to be involved with different age groups and various clinical settings. Teams of faculty members with expertise in each area developed the following cases:

- **Seminar case 1**: Pediatric patient with cerebral palsy who is starting school.
- **Seminar case 2**: Elderly patient with cerebral vascular accident and dysphagia in an acute care setting.
- **Seminar case 3**: Middle-aged adult with HIV and family issues in the community (end stages of illness).
- **Seminar case 4**: Young teen with traumatic brain injury in a rehabilitation center.

The intensive involvement of many faculty members in the development of the cases had some very beneficial effects. Interdisciplinary cooperation was necessary as the cases were developed. Faculty members were able to learn from each other and appreciate the role of the other disciplines. The faculty members who developed the cases were invested in the project and were able to support and commend it to other faculty members and to students in their classes, which reduced some resistance.
Each program was responsible for determining which students would be required to attend the seminars. The nursing program selected students who were in the spring semester of the second year of an entry-level master’s program and were enrolled in the Primary Care I course. Nursing students in this program held a baccalaureate in any field prior to entry into the program. They had completed the first year and second fall semester in the generalist level of the nursing program. They were in the process of taking the RN licensing exam during this semester (they all passed). They were then in advanced-level coursework that would lead to a master of science in nursing degree and eligibility to sit for certification as a nurse practitioner. Interdisciplinary seminar attendance was mandatory and counted as part of the clinical component in the Primary Care I course, so that students would not be required to add hours to the course. Compromise and negotiation were needed on the part of the course faculty to recognize and accept that the interdisciplinary seminar was a legitimate learning experience appropriate to the course.

Scheduling the seminars was a major problem. Coordinating three programs with students in different classes and in clinical sites was very difficult. The seminars were held in the late afternoon, and students in clinical placements were asked to leave their clinical site early enough to return to the school. There is no easy solution to this problem. Each student was sent a letter outlining the purpose of the seminars and given the dates and times. The letter explained that attendance was mandatory and that the seminar would count as class hours.

Approximately 60 students were expected to attend the seminars. Four faculty members from each department were recruited to facilitate each seminar. In smaller departments, this meant that department faculty members participated in more than one seminar. The case discussions were designed so that students had an opportunity to participate in multidisciplinary groups, meet with their own specialty, and meet as a total group. The sessions were planned to last 2 hours each.

The role of the faculty members was to facilitate but not to lead the discussion among students. Faculty members were available to correct wrong information, but the focus was to have students take responsibility for explaining their discipline’s role in working with the patient. Faculty members were not expected to be experts in the area under discussion or to introduce new material. The faculty role was explained to the students at the beginning of the session.

Previously prepared case materials presented assessment tools used by each discipline and questions to be addressed. The goals of the seminar were presented and clarified to all of the students before breaking students into groups. Students presented their assessments and plans for working with the patients, defining priorities of care. Faculty facilitators encouraged participation by all. Each small group took notes to be presented to the entire group for general discussion.

Evaluations of the seminars from both faculty members and students were excellent. The time selected for the seminars was problematic for many participants and seemed to be the major concern of students. Some students had various excuses for not being able to attend. Snow forced the cancellation of one session. All students attended a minimum of one seminar, but most attended the sessions as scheduled. Students remarked that the discussions were excellent and that they had gained new knowledge from each session.
other as the different disciplinary approaches were presented. Faculty members also benefited from the discussions, and interdepartmental communications were enhanced. Some faculty members were uncomfortable at first with the expectation of their role and were concerned that they did not know enough about specific cases; however, most soon realized that the objectives of the session were valid for the level of their expertise and the expectation of facilitation, not instruction. Overall, the project was deemed a strong success and was presented again, with minor changes.

The program has evolved, but the commitment to interdisciplinary education remains and has expanded. Students will have at least one interdisciplinary learning experience in each year. Each department is responsible for developing the experience for their students, and school-wide presentations will be carried out each semester.

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**Recommended Reading**

Butell, S. S., O’Donovan, P., & Taylor, J. D. (2004). Educational innovations. Instilling the value of reading literature through student-led book discussion groups. *Journal of Nursing Education, 43*(1), 40–44. Abstract: With the desire to instill the value of lifelong reading, nursing faculty and a librarian developed a student-led book discussion group as an innovative teaching strategy for a senior seminar course. Inclusion of the librarian was unique and influenced the shape and rigor of the assignment. In this assignment, students chose one of the faculty-selected books, researched its author(s), read relevant professional book reviews, and developed questions for their peer discussion groups. Student and faculty responses were positive and clearly demonstrated the benefits of this assignment for students’ personal development and professional growth.
Jesse, D. E., & Blue, C. (2004). Mary Breckinridge meets Healthy People 2010: A teaching strategy for visioning and building healthy communities. *Journal of Midwifery & Women's Health, 49*(2), 126–131. Abstract: In both midwifery and nursing education, it is essential to include innovative teaching strategies that address the health of communities. This article presents a creative learning activity for midwifery and/or nursing education that integrates Mary Breckinridge’s historical example with today’s national goals for building communities. The establishment of the Frontier Nursing Service in 1925 is an excellent example of the Mobilize, Assess, Plan, Implement, and Track (MAP-IT) framework for building health communities. Advanced practice nursing and midwifery students can use this historical template to implement their ideas for building healthy communities today.


