CREATING and LAUNCHING
Innovative Nursing Education Programs:
Perils and Pearls

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HEALTH CARE COMPLEXITIES AND THE UBIQUITOUS NURSING SHORTAGE REQUIRE A CONTINUAL REVIEW OF THE VITALITY AND INVENTORY OF OUR NURSING PROGRAMS. Our future depends on our seeking, creating, and launching innovative nursing education programs. Successful innovation can improve nursing education delivery and make optimal use of available resources while tapping into the imagination and creativity of faculty and students. When innovation leads to an optimistic environment, faculty, staff, and students benefit.

Innovation has been described as an art, a process of diffusion and a process of transforming ideas into real value (Kelly, 2001; Rogers, 1995). Although innovation in nursing education is seen as key to solving the nursing shortage (Institute of Medicine, 2011), it is often difficult to accomplish as the academic process is bound by tradition and restricted by time constraints and large student loads. Education redesign that incorporates the findings of the 2009 Carnegie Foundation for the Advancement of Teaching Report presents a perfect opportunity to create curriculum realignments that will accommodate the current needs of nursing practice (Benner, Sutphen, Leonard, & Day, 2009).

To those who relish creative ideas for old problems or unique approaches to new problems, the process of innovation is stimulating and exhilarating. It is not random but, rather, it is carefully planned, beginning with strategic brainstorming by two or three people. The innovation is then pushed forward by a small group of creative thinkers and early adopters (Rogers, 1995). The process of innovation may change when more is at stake, such as a major shift involving a new curriculum and education delivery method or a totally new approach to the university process. When such change is successful, everyone gets on board, and the program is disseminated through published articles, conferences, or by word of mouth and then replicated, duplicated, and borrowed.

Even with excellent ideas, the process may be flawed, and if the program does not work under current circumstances, it may be best to set the idea aside and bring it back at a later time. Once the team works out the initial problems and solves the primary challenges, the proposal can be recycled, often by bringing others in to further explore, refine, and adapt the process into a strong program for change.

The purpose of this article is to explore the concepts surrounding innovation, steps in development of an innovation, and share pearls, perils, and lessons learned so that others can explore the process within their nursing education programs. Examples are based on the authors' experiences working with multidisciplinary teams of educators and health care providers in creating the Nurse Knowledge Exchange for Kaiser Permanente (www.ideo.com/work/nurse-knowledge-exchange/) and several innovative, web-based nursing education projects (Allen, Collins, Schumann, & Selz, 2007; Allen, Van Dyke, & Armstrong, 2010; Scott-Tilley et al., 2007).

Innovation Framework Formalizing the process of innovation within an institution provides structure to the creative process. The authors have used an approach developed by IDEO, a design and innovation consulting firm recognized as a national leader in the art of innovation (Kelly, 2001). IDEO developed a framework for companies and industries to innovate and design products, services, environments, and digital experiences by transcending old assumptions, exploring radical tangents, and unleashing surprising, sometimes startling, solutions. The framework begins with a deep exploration of the organization's business, human, and technical factors, followed by observing, brainstorming, prototyping, and repeating. Once the brainstorming has resulted in prototype development, Stage 3 of innovation will include the "Plan Do Study Act" (PDSA) cycle of change identified by Deming in 1986.

DEVELOPING AN INNOVATION STAGE 1: THE IDEA The brainstorming process always starts with "what if?" At this stage it is imperative to have people who are open-minded, enjoy challenges, and are not intimidated about throwing anything into the mix in order to create interesting dichotomies and unusual juxtapositions of seemingly unrelated subjects. All ideas and possibilities are put on

ABSTRACT Nursing's future depends on continuing to seek, create, and launch innovative nursing programs. Successful innovation can improve nursing education delivery and make optimal use of available resources while tapping into the imagination and creativity of faculty and students; in addition, it can create an optimistic environment and encourage beneficial change with the faculty and staff. Innovation has been described as an art, a process of diffusion, and a process of transforming ideas into real value. The purpose of this article is to explore the concepts surrounding innovation, steps in development of an innovation, and share pearls, perils, and lessons learned so that others can explore the process within their nursing education programs.

the table without consideration of their strengths and weaknesses.

Some ideas arise from need and/or around potential funding possibilities, such as grants and/or a beneficiary. Idea generation, or possibilities for innovation, are always considered with the institution's strengths, resources, and environment at the forefront. For example, an innovation in rural health care delivery by a school in a rural setting that capitalizes on rural partners and stakeholders may not be applicable to urban populations. Ideas or possibilities, whether it is technology infusion in distance education or engaging first-generation college students to pursue science careers, should always embrace the entity's base expertise. The core to success is to go with what you know and explore new frontiers within a core area of expertise.

The strengths and weaknesses of each idea are viewed only after all ideas are explored and weighed in relation to the current environment, institutional expertise, past experience, and identification of potential and current partners or stakeholders. The top possibilities are then presented to a wider audience of faculty, administrators, and partners.

Ideas often come from other disciplines, and the combination of two or three approaches outside nursing can be stimulating. For example, an innovative curriculum shift might include business models, psychological frameworks, engineering schematics, art (e.g., architecture, movies, literature, music), Greek mythology, political science, and anthropology or culture. In reality, most successful programs have a number of different disciplines embedded and effectively woven within, resulting in a new paradigm. If an idea seems to gel and appears to have merit, partners are brought into the process to add to the idea.

DEVELOPING AN INNOVATION STAGE 2: BUILDING ON STRENGTHS AND PARTNER INVOLVEMENT As health care practice changes more quickly than academia, nursing schools should seek partners to support the need for change (Allen et al., 2010). Hospital and community partners should be at the table during the second stage of innovative development to support the idea that the ultimate goal is a better health care system that works on multiple levels, including supply and demand of qualified nurses.

DEVELOPING AN INNOVATION STAGE 3: PREPARING FOR IMPLEMENTATION Final steps to idea generation involve a well-designed plan for implementation. This planning, developed by Deming (1986), involves the creation of a prototype. The PDSA cycle (plan, do, study, and act) can be used to test and explore the innovation, all while refining the prototype through rapid reiterations. (See Figure 1.)

Taking the Ideas to Funding After the program idea has been developed and the project team has agreed on an overall plan of action, the path for implementation leads to funding through various sources (federal, state, regional, or local). There are three basic components of developing grant funding from a specific idea: a) find a compatible funding opportunity, b) adapt the innovation to the funding opportunity, and c) create a comprehensive budget within the funding limitations. Ideally, seed funding is available at the institutional level, but, typically, outside funding is needed.

Federal grants usually provide the most money and time allotment for project planning and development. Information about available Requests for Proposals (RFPs) and Program Announcements (PAs) are easily accessible online at http://grants.gov. Certain government agencies have opportunities specific to nursing, such as

Figure 1. The Process of PDSA (Plan, Do, Study, Act) as a Framework for Innovation

STEPS	ACTIVITIES
Step 1 PLAN	**Questions asked and answered by innovation team.** 1. What is the objective? 2. What do we think will happen with implementation of this innovation? 3. Why do we think it will happen? 4. Who will be involved in this innovation? 5. When and where will this innovation occur? 6. How will we measure success?
Step 2 DO	1. Implementation of innovation 2. Document process, including problems and/or unexpected results 3. Begins to analyze initial data
Step 3 STUDY	1. More in-depth data collection and analysis of process 2. Analysis and problem solving
Step 4 ACT	1. Tweak innovation (refine process and solve problems). 2. Re-implement process

the Health Resources and Services Administration (HRSA). Others have broader designations that can encompass nursing, but it is not always easy to find a perfect fit; program components may need to be adapted, divided into smaller chunks, or combined with another idea to create a fundable project.

Federal agencies that might be considered are the Department of Health and Human Services, which houses HRSA, the National Science Foundation, and the National Institutes of Health (NIH), which also contains the Agency for Healthcare Research and Quality (AHRQ). Other agencies, such as the Department of Education (DOE) and the Department of Labor (DOL), have opportunities for innovative nursing education solutions. Other federal agencies specific to certain health care specialties are not applicable to nursing workforce education and delivery (opportunities are primarily research based), but a close examination of all grant opportunities provides a strong base from which to operate.

State grant opportunities may also be accessed through the Internet. Funding amounts are usually smaller, and grants may require more regulation. Texas, for example, has the Texas Higher Education Coordinating Board (THECB), which issues annual funding opportunities, and the Texas Workforce System, which is structured to offer federal and state support as well as local funding through the Workforce Development Board (WDB) system. Every state has a WDB system that offers support money (e.g., tuition, child care) for eligible clients as well as funding for new faculty and short-term projects. The authors have found it advanta-

geous to seek the WDB as a potential partner for projects that include workforce development, training, economic development, nursing, and/or displaced workers.

Foundations and corporations offer smaller grants with shorter timeframes; these are more difficult to obtain and usually require the development of a partnership with the funder. The Robert Wood Johnson Foundation is a private foundation that specifically targets nursing, but for large projects, it is more practical to think about federal funding from the beginning of the grant process.

Translating an education innovation into a comprehensive funding project takes finesse; the most important aspect of the process is to make sure that there is enough money for the project to be successful. Components of grant funding (personnel, fringe, travel, equipment, subcontracts, and indirect costs) are sometimes politically charged, especially if partners outside the institution require subcontracts. It is usually best to ask all partners and participants what funds they would like to receive through the grant, as if it were a perfect fit, and develop a first draft budget that includes everything everyone asks for. Typically, the total far exceeds the allowable funding amount, so a compromise is required before the budget can begin to take its final form. It is important to remember that with innovation, unforeseen things will happen, good and bad. It is wise to plan for a worst-case scenario and provide for unexpected expenses. In such cases, a community partner can be asked to help or another grant can be written, but often the extra money must be taken from the applicant's discretionary funds.

Lastly, funding agencies want to know within the proposal about the self-sufficiency of the innovative project. Not having a deliberate plan of sustainability raises doubt that the major idea is good enough for replication or permanence with the nursing profession. Stating that you will seek further grants after the funding has ceased is not recognized as sufficient planning. Tables with specific performance indicators (e.g., student enrollments to generate further tuition and fees, expected state formula funding allocations) and concise letters of support outlining applicable financial support of faculty and clinical resources are expected by grant review panel members.

A Return on Investment (ROI), which explains the economic benefit of the innovation, is a recommended element of the grant application. The ROI in Figure 2 shows benefits to the community from each new graduate produced through the grant (an application that asked for two new MSN nurse educators to expand a traditional undergraduate program to regional sites). This ROI projects totals of new salaries over a period of years; it is an example of a simple computation as it does not include economic extenders. The authors usually project five years past the grant funding to give a comprehensive total.

Launching the Project When word comes that a grant application has been funded, it is time to celebrate, but it is not yet time to plunge into marketing, news releases, hiring, and recruitment. The most important first step is to review the funding that was awarded. Several things may happen to the budget when the grant is funded. The funding agency may not have awarded all requested monies; stipulations may be included that reflect federal, state, or private regulations; or the budgetary planning could have missed a major implementation piece. In any of these scenarios, adjustments must be made before the project can begin.

Other steps include the notification of accrediting agencies that funding has been received, with an expected timetable for launching the program. If the due date for submitting the grant was too tight for actual proposal submission to the accrediting agency, phone calls must be made, and a curriculum proposal submitted immediately. Accrediting agency review allowance requires a minimum of three months. Meanwhile, website development and the development of marketing tools (e.g., brochures, news releases, and, perhaps, targeted postcard mailings to potential individual applicant sectors) will be important. A toll-free telephone number may be desirable to stimulate phone conversations and questioning. Reaching the right niche for sharing messages can prove to be cost-effective. If a curriculum has not been approved by the state accrediting agency, any marketing must contain the words "pending XX (state) (agency) approval."

PERSONNEL Once funded, it is important to hire personnel as soon as possible to establish the necessary momentum needed for the initial large effort of work. When actual hiring is initiated, there may be reluctance among potential faculty and staff due to the reality that being hired for a new grant proposal carries no guarantee of a permanent position once the funded has ceased.

DIFFUSION OF IDEAS The dissemination of information about an innovative project should be a persistent emphasis throughout implementation, not just at the end of the project. With many federal and state grant-funding criteria, information on how the proposal will be disseminated is required. Demands for change, and the need for creative educational projects, happen too fast to wait until all the evaluative data are in place. The results of the project should be disseminated nationally, regionally, and locally through presentations, publications, and even consultations. Other nurses are interested in the formative perspectives of specific interventions as well as the summative lessons learned.

Do not settle for verbal and poster presentations. While manuscript development requires greater effort, having outcomes published means that the project has been through another peer review process and has greater legitimacy. Assigning and alternating lead authorship positions among key project personnel will help in the distribution of the project while recognizing leadership and expertise within a number of manuscripts.

Lessons Learned for Nursing Education Innovation is not easy. It is a planned process that will not happen without creativity and risk. A high achieving innovation team is necessary, and the team's priorities should be the institutional mission. It is important to note that even small innovations can effect large change. Adapt strategies and best practices from a range of disciplines, community partners, and competitors; partnerships and collaboration are two of the most valuable resources for innovation. Following are lessons learned for nursing education:
• Create educational systems that prepare graduates for the swiftly changing health delivery network. Nursing education will not provide students everything they need to know, so students must be able to find and use critical information.
• Share resources freely at all levels of the nursing profession.
• Push the idea of increased demand for lifelong learning.
• Regulatory changes, new curricula, new equipment, new technol-

Figure 2. Return on Investment After Two Pilot Years and Five Sustained Years of Program

RETURN ON INVESTMENT
Total original investment = $382,680
Total cumulative salaries generated with two original nurse faculty producing 100 established graduates over 5-year period = $15,568,000
ROI is $40.68 for every $1 spent
Note. Expected return on investment does not consider early attrition from the profession.

Personnel	1st yr of funding 2009	2nd yr of funding 2010	YR01 Sustainable Program 2011	YR02 Sustainable Program 2012	YR03 Sustainable Program 2013	YR04 Sustainable Program 2014	YR05 Sustainable Program 2015	Total
One (1) TBN Nurse Faculty Graduation Rate of 10 students/per year	10 Students	10 Students	10 Students **10 Grads**	10 Students **10 Grads**	10 Students **10 Grads**	10 Students **10 Grads**	10 Students **10 Grads**	70 Students **50 Grads**
One (1) TBN Nurse Faculty Graduation Rate of 10 students/per year	10 Students	10 Students	10 Students **10 Grads**	10 Students **10 Grads**	10 Students **10 Grads**	10 Students **10 Grads**	10 Students **10 Grads**	70 Students **50 Grads**
ECONOMIC RETURN ON INVESTMENT IN SALARIES ALONE:								
Salary of each nurse faculty is $62,000 minimum x 2 = $124,000	$124,000	$124,000	$124,000	$124,000	$124,000	$124,000	$124,000	$124,000 per year faculty salary
Salary of each graduate BSN nurse is $49,000 minimum x 20 graduates/per year	20 new students	20 new students enrolled 20 2nd yr students	20 new students enrolled + 20 2nd yr students 20 new grads $980,000	20 new students enrolled + 20 2nd yr students 20 new grads $980,000 20 established grads $980,000	20 new students ± 20 2nd yr 20 new grads $980,000 40 established grads $1,960,000	20 new students + 20 2nd yr 20 new grads $980,000 60 established grads 2,940,000	20 new students ± 20 2nd yr 20 new grads $980,000 80 established grads 3,920,000	**100** established grads $4,900,000 per year
Total Enrolled	20	40	40	40	40	40	40	
Total New Grads Minimum salary $49,000			20 $980,000	20 $980,000	20 $980,000	20 $980,000	20 $980,000	
Total Graduates through this program Minimum salary $49,000-			20 $980,000	40 $1,960,000	60 $2,940,000	80 $3,920,000	100 4,900,000	
Total salaries poured back into economy	$124,000	$124,000	$1,104,000	$2,084,000	$3,064,000	$4,044,000	$5,024,000	
CUMULATIVE TOTAL	$124,000	$248,000	$1,352,000	$3,436,000	$6,500,000	$10,544,000	$15,568,000	Salaries alone: $15,568,000

ogy, and new learning pedagogies and androgogies must be used to provide the maximum learning experience for students.

• Partner experienced faculty with new faculty and incorporate new methods of teaching and content delivery.

• Incorporate new technologies to design learning situations that actively engage and stimulate learning.

• Access and use available evaluative methods to gain understanding of new processes, including student, faculty, and administration satisfaction surveys, nationally standardized test results, graduation rates, and/or production rates compared to traditional pathways or methods.

Perils While broad nursing program innovation requires spontaneity of ideas and risk taking, it also requires a clear understanding of operating policies of the lead institution and regulatory agency guidelines. "Who owns the idea" can create disharmony among team members. Therefore, it is important for the team to

review established intellectual property policies that define ownership of ideas and innovations created on university time, especially if the innovation is to be patented. This problem is eliminated if creative information is freely shared throughout the nursing profession.

Regulatory guidelines can affect diffusion of the innovation. Understanding policies and procedures from state regulators, such as state Boards of Nursing, and regional accreditation agencies is essential. It is important to have proactive conversations with administrators before launching an innovative idea.

Administrative support to tolerate failure is crucial for the innovation process to succeed, but if all the other components for innovation are in place, most problems will have been considered, if not solved, before implementation. The chance of failure is always a threat, but structures allowing for failure also have mechanisms for keeping up momentum, quickly adjusting and adapting the model and moving to the next iteration. In extreme cases, the project

director might ask for a no-cost time extension or postpone funding until the problems have been worked out.

Planning for sustainability while operating on soft money from grants is another important conversation to have with administrators. For state-supported schools in Texas, state formula funding from the launch of any new student-based program requires two years before increased student numbers create additional income for the school; outside funding sources that allow enough time for formula generation are important, and start-up monies are often needed for pilot projects. Administrators and grant personnel must be comfortable with the hope that formula generation will sustain the project in the future. Innovation is never without risk. More than likely, a return on investment will not be seen for more than two years.

An important risk to consider may occur in the teamwork approach to innovation. Everyone may not have an equal voice in every innovation, but if the team is strong, opportunities for leadership roles will be provided to different people at different times. As leadership is passed from one project to another, tasks and functions are passed as well. In a healthy team, members should be able to assume any of the principal roles and be able to step in at any level of the process. One person, however, should bear the oversight for each project and have the final say in all decisions.

A final note: A new program might be perfect, but if the faculty who are going to deliver the program do not have an open mind and a willingness to alter their way of doing things, even the most perfectly designed program will never work. It is essential that the call for change comes from an authoritative source, but it is also essential that faculty be brought to the table before the final decisions are made. Those who have an opportunity to voice their ideas are more likely to listen to yours.

Pearls It is fitting that we end with the pearls, the jewels, so to speak, of investing human capital and money to foster positive change. The foremost benefit is creating opportunities to revolutionize nursing education for the better. This important step for nursing education does not come without a price, but if the process is done well, there are opportunities to develop meaningful partnerships based on open models of collaboration and cooperation. These partnerships will become the support system for progressive improvements in the future (Allen et al., 2010).

In recent years, innovative nursing education programs have been successfully implemented throughout the nation. Three innovative examples — the second-degree program at the University of Wisconsin-Oshkosh, the Texas Tech HSC School of Nursing second-degree, web-based BSN program, and a new model of BSN nursing education currently being presented by Western Governors University — all use a variation of a one-on-one coaching model for clinical education. How the model has been implemented varies by program, but the innovation of providing a one-on-one student/teacher as clinical coach has grown from an idea to a successful clinical teaching strategy through the innovation process: brainstorming, planning, doing, studying, reiteration, and quick turnarounds to refine the process.

The exponential technological development and turbulent economic times of today's world require constant change. While some parts of the human learning processes remain the same, much of the way students of this generation learn is completely different than 20 years ago. Through creative educational design, we have an opportunity to develop programs that will reach more students in more significant and consequential ways. While many ideas for change are not immediately feasible, the rewards of the innovative process are incalculable for developing personal and professional growth and an appreciation for other people's ideas.

Conclusion With a grave nursing shortage already in full blast, scarce resources, accelerated technological advancement, a constantly shifting health care arena, and an ever-present human factor, the pursuit of new ways to bring innovation to nursing education is crucial to keeping nursing programs sharp and current. Exploration and development of good ideas must take place at all levels of the educational process. Administrators must encourage, nurture, and reward the creative spirit at all levels, from student assistants and staff through tenured professors.

While innovative idea generation is achieved through a structured process, innovation itself involves transformation. The two most important elements in the process of transformation are: a) realizing that change is needed and b) developing a culture of change in the organization. While many ideas for change are not immediately feasible, the rewards of the innovative process — developing personal and professional growth and an appreciation for other people's ideas — are incalculable. **NLN**

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References

Allen, P., Collins, C., Schumann, R., & Selz, N. (2007). Reinventing practice and education partnerships for capacity expansion. *Journal of Nursing Education, 46*(4), 170-175.

Allen, P., Van Dyke, Y., & Armstrong, M. L. (2010). "Growing your own" nursing staff with a collaborative accelerated second degree web-based program. *Journal of Continuing Education in Nursing. 41*(3), 118-122.

Benner, P., Sutphen, M., Leonard, V., & Day, L. (2009). *Educating nurses: A call for radical transformation.* San Francisco: Jossey-Bass.

Deming, W. E. (1986). *Out of the crisis.* Cambridge, MA: MIT Press.

Institute of Medicine. (2011). *The future of nursing: Leading change, advancing health.* Washington DC: National Academies Press.

Kelly, T. (2001). *The art of innovation.* New York: Doubleday.

Rogers, E. (1995). *Diffusion of innovation.* New York: Free Press.

Scott-Tilley, D., Allen, P., Collins, C., Bridges, R., Francis-Johnson, P., & Green, A. (2007). Promoting clinical competence: Using scaffolded instruction for practice-based learning. *Journal of Professional Nursing, 23*(5), 285-289.