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Health care innovations across practice and academia: A theoretical framework

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ABSTRACT

Background: An innovation scholarly interest group used the *Jobs to Be Done Theory* from the business literature to provide insight into the solution-focused progress that nurses are trying to make in challenging situations.

Purpose: This article presents a theoretical framework for understanding the progress nurses are trying to make through health care innovations across both practice and academic environments.

Method: This was a qualitative descriptive study using directed content analysis. We used *the Jobs to Be Done Theory* to guide the development of the semistructured questionnaire and the interpretation of findings.

Findings: A theoretical framework of nursing innovations was derived to summarize and visually display the pathways and linkages of challenges, innovations, and impact domains of nursing innovations. Situations and opportunities arise within the context of interconnectedness and can lead to health care innovations in care delivery, patient care interventions, role transitions, research and translational methods, communication and collaboration, technology and data, teaching methods, and processes to improve care.

Discussion: This theoretical framework offers insight into the dynamic interactions of academic-practice partnerships for innovation. Workplace situations are interconnected and can result in needed innovations designed to impact care delivery.

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Introduction

The current imperative to innovate in health care systems challenges all nurses in practice and provides unique challenges in complex organizations. Berkowitz (2017) suggested that the development of partnerships across academic health sciences and health care organizations is necessary for innovation and emphasized the part of leaders in education, research, and practice

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play in creating these. The current innovation agenda requires leadership using variables that influence human interaction such as decision-making, innovation, technology, and direction (Porter-O'Grady & Malloch, 2015). Leadership capacity is required to advance the needs of complex systems. In addition, the complexity found in systems requires integration, coordination, and facilitation of complex groups. Continued existence within a complex dynamic health care environment requires a clear conceptualization of the context of care including specific processes to ensure a thriving environment. Leaders must envision ways to evolve through innovation. Lombardi, Spratling, Wei, and Shapiro (2018) reported even the most capable leaders of academic health care centers may not yet provide systematic support for preimplementation activities or the appropriate reward structures needed to produce high-impact health care innovations on an accelerated basis. A fresh look at the theoretical frameworks driving the psychological climate and organizational culture backdrop for innovation, and the resultant innovativeness, is needed to help drive innovation in practice.

Innovativeness is defined as social interactions within the clinical practice and nursing education environments for the generation, acceptance, and implementation of new processes, products, or services within an organizational setting (Innovation Scholarly Interest Group [SIG], 2017). Joseph (2015) examined innovativeness in nursing and identified five antecedents for innovativeness: (a) organizational values, (b) workplace relationships, (c) organizational identification, (d) organizational support, and (e) relational leadership. These antecedents provide the climate which enables trust in the organization to support a social process of innovativeness. A foundational climate leads to inquiry, idea generation, support, trialing, and learning. Innovations in nursing practice are a fundamental source of progress. The process is contingent on organizational commitment, which is associated to leadership capacity. An important but poorly studied aspect of organizational innovation is the partnerships in nursing across academic health sciences centers and their associated educational institutions. They called for leadership and organizational commitment to allow employees to inquire and question organizational practices and issues on behalf of its mission. This finding supports an earlier commentary (Lamb & Zazworsky, 2011) that stated scaling up innovations should not be the sole responsibility of principle investigators and research teams alone, but also that of deans and health systems leaders who plan and support the expansion of innovations in the organization.

The national discussion on the depth of interconnectivity in nursing between academia and practice persists. In *Advancing Healthcare Transformation* (American Association of Colleges of Nursing [AACN], 2016), two significant findings were revealed: (a) institutional leaders now recognize the missed opportunity for alignment with academic nursing and are seeking new approaches, and (b) insufficient resources are a barrier to these collaborations. Berkowitz (2017) noted we are in an age of transformation and that innovations have traditionally guided the development of new models for delivering care. The focus in the literature tends to be on implementation of innovations (Fleuren, Paulussen, Van Dommelen, & Van Buuren, 2014). Therefore, nursing must position itself to better forecast what needs to be done. One key strategy is for academia and health care organizations to partner and support innovations. There is a dearth of theoretical frameworks to guide such strategies.

The purpose of this article is to present a theoretical framework for understanding health care innovations across both practice and academic environments. It illustrates a new understanding of the dynamic interrelationship among factors that generate organizational innovativeness in health care environments and provides a blueprint for designing partnerships across practice and academia to support continual innovation.

Background

Christensen, Hall, Dillon, and Duncan's (2016) *Jobs to Be Done Theory* was chosen as the foundation to build a theoretical framework for health care innovations across both practice and academia. Incorporating the idea of disruptive innovation, Christensen et al. (2016) suggested that when people innovate, they are trying to achieve solutions and progress in their jobs. To innovate is to find a new way for the end user to accomplish the job-to-be-done. End users engage in a process intended to solve problems by getting to the root cause and then designing subsequent processes to prevent recurrence because it is important to avoid replicating errors. The deliberative and holistic problem-solving process is more effective than creating processes to merely mitigate the problem in a haphazard fashion. Workarounds in nursing are an example of creating haphazard or patchwork fixes to problems.

Nurses in practice are expected to identify solutions to complex problems in order to get the job done for patients, nurses, and organizations. The *Jobs to Be Done Theory* from business literature provides insight into what solution focused means in the context of nursing. Christensen et al. (2016) believe that to be solution focused, the progress one is trying to make in a given circumstance or when completing a job, needs to be considered. Helping patients, nurses, and organizations get the job of delivering high quality yet low-cost patient care done better, faster, more effectively, and more efficiently is a prime reason to initiate the innovation process. Thus, actual nurse innovations would contain a component of responsiveness to jobs-to-be-done.

The premises of the *Jobs to Be Done Theory* support partnerships (Christensen et al., 2016). The *Jobs to Be Done Theory* defines any work circumstance as an effort to achieve progress. A job is defined as the progress an

individual seeks in a given circumstance. Successful innovations are defined as enabling a customer's desired progress, resolving struggles, and fulfilling unmet aspirations. The circumstance is seen as the unit of innovation work; it is ongoing, recurring, and seldom a discrete event (Christensen et al., 2016).

The theoretical framework proposed was also informed by contemporary thinking about innovation and innovators. Isaacson's (2014) book *The Innovators* presents powerful examples that demonstrate how values, intentions, aesthetic judgments, emotions, personal consciousness, and a moral sense are involved in all human creativity. Isaacson asserted if people can link beauty to engineering, humanity to technology, and poetry to computer processors, then innovations would occur. Innovation will come from creators who can flourish where the arts intersect with the sciences, and who have a rebellious sense of wonder that opens them to the beauty of both. This premise supports the definition used by the Innovation Scholarly Interest Group (SIG), which defined *innovation* as "a new mindset in a different context to enable creative linkages that will generate a solution or adaptation to a practice problem" (Innovation SIG, 2017, p. 1).

Methods

In 2015, academic nursing faculty members, an entrepreneurial fellow from the School of Business and practice partners formed an Innovation SIG at the University of Iowa. The University of Iowa has both a college of nursing and a major teaching hospital. The SIG members initially sought to determine what was actually occurring with respect to innovations across both the academic and practice settings. Their questions were supported by Lombardi et al. (2018) who noted a theoretically informed framework is missing when assessing the current innovation context in academic health centers. The purpose of this study was to develop a theoretical framework to understand health-care innovations across both practice and academia.

As an initial means to develop an understanding of innovations in our settings, the Innovations SIG initiated a qualitative descriptive study using a directed content analysis approach (Hsieh & Shannon, 2005). Directed content analysis is a theory-driven qualitative method, and in this study, the *Jobs to Be Done Theory* (Christensen et al., 2016) guided the development of the semistructured questionnaire and the interpretation of findings. This theory was utilized to conceptually extend the phenomenon *of Jobs to Be Done* in nursing. The purpose of the study was to assess the academic-practice phenomenon and types of job solutions that required nurses to innovate. The semistructured survey based on the *Jobs to be Done Theory* was designed to examine which type of job solutions required nurses to innovate. Targeted semistructured questions were developed and provided to the research team to establish credibility. The study did not involve human subjects, as determined by the Institutional Review Board of the University of Iowa. The semistructured questionnaire was developed and launched using Qualtrics where respondents were provided with four targeted prompts to describe the developmental process of the innovation (see Table 1). A survey link was sent to a convenience sample of 82 faculty and staff members in the College of Nursing, as well as 3,000 nurses at the medical center in March 2017. Fifty-seven surveys were returned: 24 from the College and 33 from the medical center. The survey solicited descriptions of innovations by nurses with the level of interest unknown. The sample size is consistent with qualitative studies which typically consist of 12 participants (Joseph, 2015). The data were analyzed utilizing content analysis in an Excel spreadsheet (Hsieh & Shannon, 2005) by the SIG members.

Prior to beginning the content analysis, three research team members read the *Jobs to Be Done Theory* to achieve collective understanding of the key concepts. The analysis began with the lead researcher becoming immersed in the data by reading the transcripts several times searching for and identifying key concepts emerging from the data that resonated with key concepts based on the *Jobs to Be Done Theory*. This in-depth analysis resulted in a framework describing a sequence of inter-related events beginning with identifying the progress nurses are trying to achieve in their work based on challenges and ending with the impact they achieved. Each event was separately coded by three members of the SIG. Differences in coding were discussed among researchers until a consensus was reached. Next, the codes were categorized into meaningful categories. Then major categories were reviewed

Table 1 – Prompts to Describe the Developmental Process of the Innovation

Question	Prompt
1	In your professional work (research, teaching, service, and practice), have you developed a strategy, solution, or innovation to fulfill a need, get a job done, or reduce workarounds?
2	Please describe the situation that required a solution.
3	Please describe the strategy, solution, or innovation you developed.
4	In what circumstances are people using or going to use your strategy/solution/innovation?
5	How would you describe or measure the impact of your strategy/solution/innovation?

repeatedly and defined by members of the SIG to ensure consistency and accuracy. We recognized that codes in the major category of opportunities were aligned with Druker's sources of opportunities. Therefore, we coded that superordinate category using his seven sources (Drucker, 2014). To achieve concordance, one additional SIG member participated in the final coding process. Lastly, a sequential diagram evolved to organize the relationships between major categories, superordinate-categories, and categories while illustrating the simultaneous process that occurs across an academic setting and medical center (see Figure 1).

Results

Findings are illustrated in a theoretical framework (Figure 1). The results revealed that nurse faculty and practicing nurses are trying to make progress in their jobs or circumstances that transcend across practice and academia in three challenging areas: (a) patient access and care across the life span, (b) nursing education and research, and (c) the health system environment Joseph et al. (2019). Nurses in academia and practice recognize that opportunities exist within these challenging situations. The potential opportunities are process needs, new knowledge, incongruences, and change in perceptions. These opportunities result in solutions or innovations that are interconnected because faculty and practice nurses share common ground in their core discipline. The eight specific innovation types identified by this study are: care delivery models, patient care interventions, role transitions, research and translational methods, communication and collaboration, technology and data, teaching methods, and processes to improve care (see Figure 1).

Situations and opportunities arise within the context of interconnectedness and can lead to health care innovations in care delivery, patient care interventions, role transitions, research and translational methods, communication and collaboration, technology and data, teaching methods, and processes to improve care. This theoretical framework offers insight into the dynamic interactions of academic-practice partnerships for

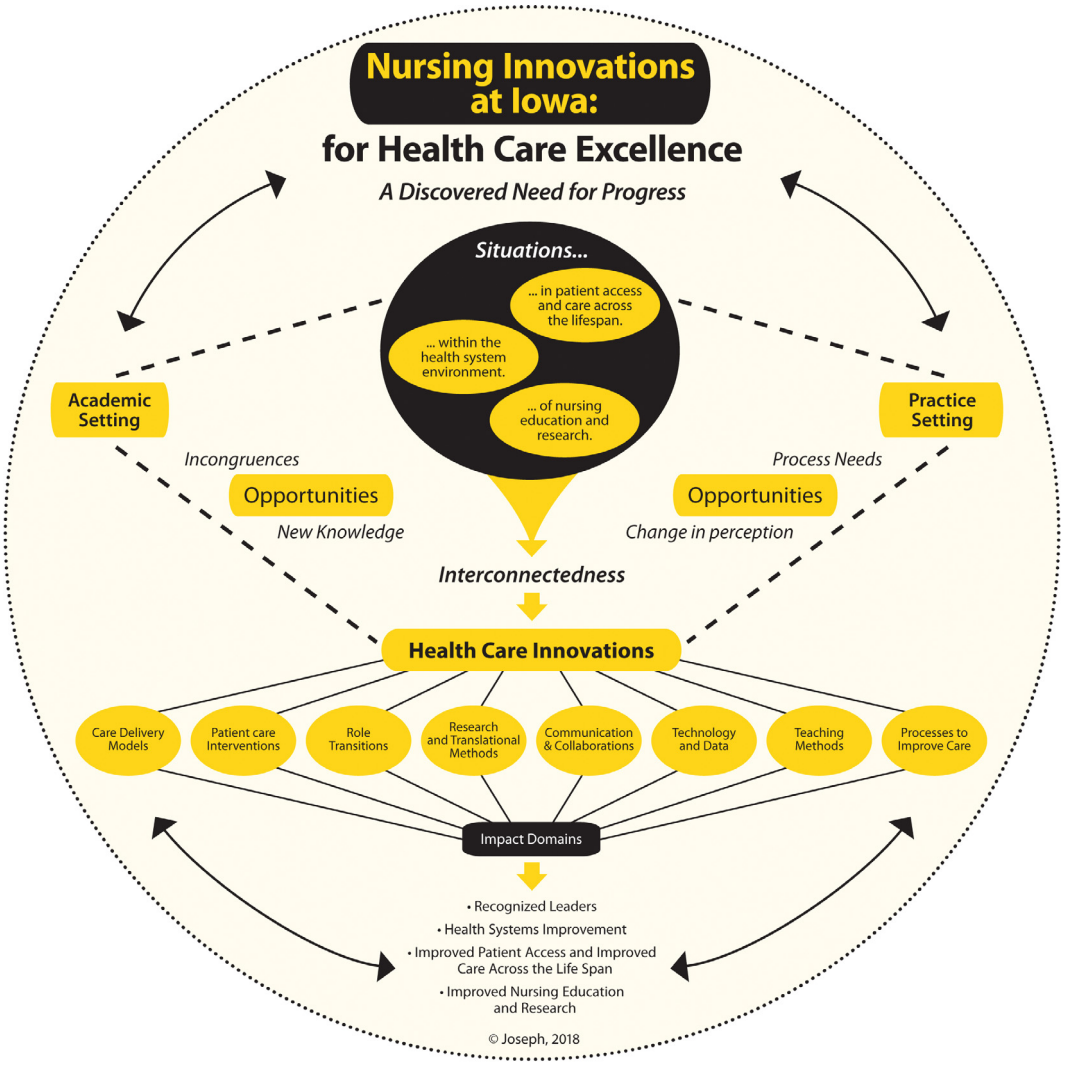

Figure 1 – Theoretical framework: Nursing Innovations for Health Care Excellence.

Table 2 – Types and Predominant Settings for Innovations

Academia and practice	*Practice*
50%	
▪ Create care delivery models	
▪ Patient care interventions	
▪ Processes to improve care	
▪ Role transitions	
Academia	
30%	*20%*
▪ Development of teaching methods	
▪ Collaborations	▪ Harnessing of technology and data
▪ Research and translation methods	

innovation. Workplace situations are interconnected and can result in needed innovations designed to impact care delivery.

Fifty percent of the innovations transcended across academia and practice (Table 2). Nurses in both settings were innovating around care delivery models, patient care interventions, research and translational methods, and role transitions. Thirty percent were predominantly in academia, including: processes to improve care, collaborations, and teaching methods. Twenty percent were in practice. Innovations included harnessing of technology and data. The impact of these innovations across both academic and practice settings include recognized leadership, health systems improvement, improved patient access, improved care across the life span, and improved nursing education and research. Table 3 presents challenges, examples, and selected innovations to further clarify a description of the elements of the theoretical framework.

Implications

New Approaches

The use of the *Jobs to Be Done Theory* from the business literature illustrated the both the academic and practice settings experience similar challenges. There is interconnectivity between nursing academia and practice because they both operate within the same discipline of nursing and health care environment. This interconnectivity triggers an ongoing need to discover progress with similar jobs, tasks, or circumstances and is further enhanced by cybernetic pathways of the environment (Porter-O'Grady & Malloch, 2015). This cybernetic pathway or system is dynamic and interactive between academia, practice, and the external environment, resulting in an intersection of commonality, flexibility, and continuous dynamic change. Therefore, nurses need to identify opportunities to increase capacity in both settings, engaging with each other to change perceptions, processes, and new knowledge simultaneously. The time lag detriment for the advancement of innovations in practice. Reimagining tighter mechanisms for collaborating and sharing across both settings will be important. This study provided an impetus to begin these discussions and to identify our shared vision is about providing the best care to patients in complex environments.

According to the National Academy of Sciences, Engineering and Medicine (2017), the measurement of innovation found in the literature focused more on the organizational level. The impetus for the innovations identified in this study are challenges that exist more broadly in health care. Specifically, these challenges focus on patient access and care across the life span, nursing education and research, and health system improvements. These lead to questions such as: Is there a way to create national measures that both academia and practice could target or pursue simultaneously? Is there a way to acknowledge that both are working on the same activities? These are important questions which need to be addressed to impact the ability of nurses to innovate in both education and practice.

There are three main contributions of this work:

1. Nurses have always been innovators, but this often goes unrecognized. For example, nurses' practice effectiveness and problem-solving innovativeness are seen in workarounds; defined as temporary methods for completing a task when the usual or planned method is not working (van der Veen et al., 2018). Workarounds are most frequently discussed in relation to information technology and medication administration (Barrett & Stephens, 2017; Patterson, 2018; van der Veen et al., 2018). A tool has been developed to measure nursing workarounds (Halbesleben, Rathert, & Bennett, 2013); however, despite the creative, resourceful, and innovative aspects of workarounds, these behaviors may be questioned as unethical (Berlinger, 2017; Lalley & Malloch, 2010) because it is not yet a supported, legitimized, and rewarded part of the nursing role.
2. Nurses are uniquely positioned to see opportunities for innovation because they are at the center of patient care and interact with many health care professionals as well as perform administrative functions. They know the workflow and challenges which creates the opportunity for innovation to *get the job done*. Innovation think tanks and nurse "maker" spaces are emerging in academic and practice settings to provide the space and materials needed for informed nurses to create solutions instead of workarounds. These programs harness temporary innovations to improve processes, effectiveness, and efficiency. From programs such as MIT's MakerNurse (2016) Initiative and its offshoot, Maker Health, to dedicated innovation spaces in colleges of nursing, and dedicated nurse maker spaces in academic medical centers, programs developed by academic institutions, healthcare centers, private businesses, and foundations are beginning to document, provide

Table 3 – Definitions of Innovation Challenges and Innovation Types

Challenges	Definition	Example
Patient access and care across the life span	Inability of an individual to obtain entry to a health care service or for providers to provide optimal care for a specific population.	Iowa Pain thermometer to assess pain in older adults
Nursing education and research	Quest to address knowledge and practice gaps by revising curriculum and creating new measures, tools, evidence, or knowledge through research.	Teaching heath finance
Health system environment	Unfavorable circumstances and outcomes related to care delivery, roles, and technology that limit the optimization of health care delivery to patients.	Leadership development simulation

Innovation Type	Definitions	Examples
Care delivery models	The structural and operational mechanisms that provide the context for nurses to provide care to patients and families.	A mobile admission nurse service.
Patient care interventions	Actions that nurses take to change, modify, intervene, or alter the processes of providing care to patients and families.	Listening visits for depressed mothers of NICU infants
Role transitions	When a person moves between roles, crossing role boundaries, and disengaging from one and engaging in another.	Young Pediatric Nurse Clinician Program (YPNCP)
Research and translational methods	Careful and thorough study to collect information; a systematic investigation to determine facts or principles; bringing research in health care sciences into clinical application and relevance.	GeriatricPain.org
Communication and collaboration	Interpersonal interactions to transmit shared understanding and cooperative arrangements that support working together toward a common goal.	Interdisciplinary collaboratory of faculty representing engineering, public health, nursing and CLAS that work with senior living communities to identify needs and then develop approaches that can be tested via research.
Technology and data	The application of scientific knowledge (tool, technique, product, process, method, or system) to achieve or enhance practical tasks. Data are pieces of information or facts collected in a study or stored and processed by a computer.	New workflow and scheduling questionnaire that would assist in the scheduling and patient clinic flow during our busy clinic days.
Teaching methods	Principles and methods of instruction; pedagogy.	Evaluation of educational health material using SMOG readability and health literacy evaluation tools.
Processes to improve care	Designing or redesigning care delivery to reach desired outcomes such as higher quality, lower cost, improved access, or greater patient/family or nurse satisfaction.	Real time data display for interprofessional team planning. Data are displayed in unit work rooms, patient records, and during huddle.

instruction for, and support low-cost nursing innovations.

3. The theoretical framework for health-care innovations across practice and academia contributes new directions for better understanding how researchers and clinicians can work together for innovation. The most fruitful and promising areas are those where the work activities of both practice and academia overlap. The need for collaborations between researchers and practicing nurses across academic medical centers is endorsed by The Manatt Health Project Team report (AACN, 2016) as a feasible way to build bridges for the translation of new knowledge into practice.

Recommendations/Resources

Capturing the synergies possible in academic and practice partnerships requires support that current practices may not provide. In a review of the 139 articles/abstracts published in *Nursing Outlook* in 2017 (see Figure 2), we found 33% or fewer of both the research and practice articles had authors collaborating in an academic-practitioner partnership (i.e., authors from

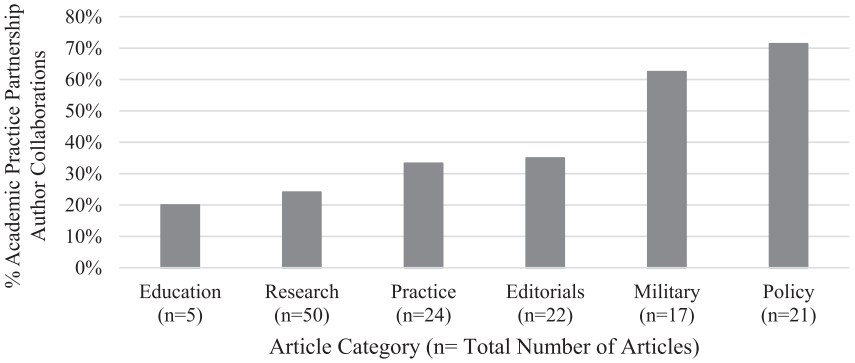

Figure 2 – Percentage of academic-practice partnerships in author collaborations published Authorship *Nursing Outlook* (2017).

both colleges of nursing and other health-care organizations). However, over 70% of the policy articles were published by such partnerships (see Figure 2). Impactful policy statements and innovations in research, practice, and education to transform health care require successful collaboration between academics and practitioners. Current research and publication practices need to address issues of funding, misaligned incentive systems and suboptimal collaborative practices.

First, agencies funding research to produce innovations can foster partnerships by requiring the inclusion of practicing nurses as part of the study and authorship teams. Historically, such requirements have worked. For instance, some programs at the National Science Foundation in the United States that sought technological innovation began to require university-corporate collaboration as a condition of funding (Cohen, Florida, Randazzese, & Walsh, 1998). Agencies which fund health care research, such as the National Institute of Health, might adopt similar policies.

Second, incentives for academics and practitioners must be aligned and supported by both deans and leaders of academic health centers. For practicing nurses, grant funding for release time does not ensure their ability to participate in planned partnership meetings unless they are guaranteed coverage for this release time. The work of practicing nurses is time sensitive and crucial to the quality of patient care their organizations provide, therefore, coverage of their responsibilities is critical to partnership success. Further, if work on collaborative innovative projects could provide some of the continuing education credits needed by practicing nurses, participation on projects would be legitimized as an important component of clinician's professional competence. In addition, legitimizing nurses' use of time to explore innovations—for instance, the noticing and documenting processes requiring improvement—would support innovation. For example, forums such as MIT's MakerNurse Initiative (http://MakerNurse.com) allow practicing nurses to test, share, and be rewarded for innovations.

For academic researchers, there are often few career rewards for including practicing nurses in the conception and design phase of their studies. However, challenging traditional design and implementation contexts, to ensure multiple perspectives in complex systems, would benefit both academics and practicing nurses. It would benefit by facilitating the interpretations and meaning-making process essential for impactful academic research and by producing research and innovation that is broadly relevant for practicing nurses and easy for them to disseminate and adopt. Academic institutions could reward individual research agendas and programs for their impact on practice as well as their scholarly impact. For instance, the UK has expanded its Research Excellent Framework for universities (http://www.ref.ac.uk/) to explicitly include "the impact of research on practice as a way of assessing scholarly outputs" (Bartunek & Rynes, 2014). Reward systems, such as the one in the UK, allow the researcher to have a broader context in which to understand the phenomenon of innovation and may provide opportunities to ensure the practicability of innovation initiatives.

Third, leveraging the synergies of academic-practitioner partnerships will require developing best practice guidelines for addressing the tensions and frustrations inherent in such partnerships. Best practices must address four tensions present in academic-practitioner partnerships: differing logics (assumptions and frames of reference), time perspectives (academic time horizons are perceived as excessively long by practitioners), communication practices (jargon and tacit knowledge), and the question of academic rigor vs. practical relevance (Bartunek & Rynes, 2014; Bartunek, Trullen, Bonet, & Sauquet, 2003). Technology-enabled practices such as chat rooms, video meetings, screen sharing, and discussion boards (i.e., various web services) can aide joint definition and interpretation of the problem at hand and goals for innovation, especially when teams are not colocated (Bartunek et al., 2003). Practices found to facilitate collaboration and decrease conflict across group boundaries in health care setting, which include supportive workplace relationships (Joseph, 2015), cross-boundary trust building practices such as perspective taking (Williams, 2007, 2018) and relational practices such as shared knowledge and

respect (Gittell, 2009; Havens, Vasey, Gittell, & Lin, 2010), warrant examination in the nursing field's effort to build a set of best practices that collaborators can implement themselves as they face the tensions and capture the synergies of academic-practitioner partnerships for innovation.

Practicing nurses tend to access professional development through continuing education offerings; however, that limits the ability to advance practice. For example, if nurses are challenged by problems, there must be a forum to allow them to test new strategies openly. The opportunity for collaboration both within nursing and with other disciplines based on areas of inquiry is key to productive innovation. Our suggestions are a call for leaders in academic and practice settings to provide both nurse faculty and practicing nurses with the resources, rewards systems and flexibility to collaborate, and to forecast the next innovation. The opportunity for inquiry-based collaboration both within nursing and with other disciplines is key to productive innovation. The first step is to create a culture, context, and infrastructure that not only tolerates, but also promotes innovations.

Conclusion

It is evident that the theoretical framework developed by this research, which is based on the *Jobs to Be Done Theory,* provides a beginning framework to assess the context for innovations across an academic-practice setting. The model highlights the current challenges in health care and the need for progress in many circumstances such as practice, service, research, or teaching. The various components of the model are multifaceted, but the dimensions allow one to see the big picture from conception to impact. Overcoming barriers to time and productivity constraints and integrating practicing nurses into innovation efforts can augment benefits to organizations and systems.

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Supplementary materials

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