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Multi-method teaching strategies to integrate selected QSEN competencies in a Doctor of Nursing Practice distance education program

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Abstract

The Quality and Safety Education for Nurses (QSEN) initiative identified six competencies for the education of nurses (patient centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics) and the related knowledge, skills, and attitudes (KSAs) for each competency. The initial

QSEN focus was on competency development during pre-licensure nursing education, with subsequent attention on adapting the KSAs for graduate programs that prepare advanced practice nurses for clinical roles. Description of successful QSEN competency integration in Doctor of Nursing Practice (DNP) programs is limited. While the ultimate goal is executing DNP programs where quality and safety is thoroughly integrated throughout the curricula, the focus of this article is on multi-method teaching strategies to integrate selected QSEN KSA's into an existing online post-Master's DNP quality and safety course.

Introduction

In 2004 the American Association of Colleges of Nursing (AACN) endorsed the Doctor of Nursing Practice (DNP) degree as the terminal degree for advanced nursing practice. The AACN *The Essentials of Doctoral Education for Advanced Nursing Practice*[1] guide DNP curricula with an emphasis on programmatic content related to evidence-based practice, quality improvement, and leadership within a systems perspective. As of August 2010 there were 227 institutions in 37 states and the District of Columbia offering or planning DNP programs.[2]

In 2003 the Institute of Medicine (IOM) in a report, *Health Professions Education: A Bridge to Quality* [3] identified five core competencies that all health disciplines should possess, namely: provide patient centered care, work in interdisciplinary teams, employee evidence-based practice, apply quality improvement and utilize informatics. In response to this and related IOM reports the Quality and Safety Education for Nurses (QSEN) initiative, funded by the Robert Wood Johnson Foundation, was launched to inform and

guide integration of quality and safety competencies in nursing education. The QSEN faculty and national advisory board, with representatives from national nursing organizations, added a sixth competency domain titled safety, as well as defined competency related knowledge, skills, and attitudes (KSAs) needed to practice effectively within the complex health care environment. The initial QSEN focus was competency development during pre-licensure nursing education, followed by suggested adaptation for graduate and practice doctorate nursing education.[4-6]

The QSEN competencies are consistent with, and embedded in the AACN DNP Essentials.[1] The challenge is to utilize multi-method strategies to support robust integration of these concepts throughout DNP curricula in a manner encouraged by Pohl and colleagues.[6] This article describes the use of multiple methods to integrate QSEN KSA's into an existing online course. Multi-media, more specifically, student team produced educational videos, provided the vehicle for experiential learning, interpretative thinking, reflective practice and peer-review to facilitate DNP student achievement of selected advanced QSEN competencies.

<center>Background</center>

Our School of Nursing began offering a post-masters DNP online distance-education program in 2007 and two years later received accreditation from the Commission on Collegiate Nursing Education. The Health Care Quality and Patient Safety (HCQPS) 15-week asynchronous online DNP course was offered for the second time in fall 2009. Sixteen advanced practice nurses, with clinical expertise spanning primary, acute and chronic care, school health and organization of care, were enrolled in the course. The students had completed 5 of the 12 required courses making them

experienced with distance education, Blackboard (the online learning system), discussion boards, library resources and services, and effective mechanisms for contact and dialogue with peers and faculty. Interestingly, all students were familiar with the AACN DNP Essentials, but none were familiar with QSEN.

The HCQPS course objectives were based on the AACN DNP Essentials and QSEN competencies with emphasis on advanced teamwork and collaboration, evidence-based practice, safety, quality improvement, and informatics. The assigned course readings, PowerPoint presentations combined with an audio component, video clips, and related discussion boards and assignments helped students advance KSAs related to the nature of error and harm in healthcare, organizational culture, systems theory, error reduction strategies and tools, measurement, the business case for quality, teamwork, communication, and the QSEN initiative. Readings from the Agency for Healthcare Research and Quality's *Patient Safety and Quality: An Evidence-based Handbook for Nurses*[7] furnished valuable insights from national experts.

Realizing the importance of advancing the QSEN competencies and the potential impact that the DNP students had to influence healthcare quality and patient safety, a new fast paced, creative assignment, combining an evidence based review with an experiential informatics/technology component replaced a previous assignment as a course requirement. The assignment, student team produced educational videos, provided the vehicle for students to:

- acquire a comprehensive, evidence-based understanding of a patient safety topic,

- consult with stakeholders and subject matter experts,

- distill a complex topic into a short educational video production targeted to a selected audience,

- discover the role of multi-media technology in effective message design,

- utilize advanced communication techniques and,

- cultivate interpretive thinking.

The new assignment created the opportunity for online DNP students to critically analyze, synthesize, and evaluate information, resources and technology and together apply it to creating compelling messages for a defined population. Epstein and colleagues[8] used student team produced videos to replace individual student case study assignments. They report that students responded with enthusiasm to the new challenge and the opportunity to take a more creative role in their own learning.

Students were informed of the educational video production requirement on the first day of class via the online course board and a teleconference course orientation. The video was due during the thirteenth week of the course.

<div align="center">Theoretical Foundation</div>

The QSEN competencies of advanced teamwork and collaboration and advanced informatics literacy, represent areas that are difficult to convey (through online readings or discussion), or measure (through student writing of scholarly papers). The advancement of these competencies by DNP students requires a problem-based, interactive, experiential learning environment, as postulated in adult learning theory.[9] Experiential learning, the main source of working or "how to" knowledge,[10] is ideally suited for experienced clinicians, for according to Kolb[11] such learning pursues a framework for examining and strengthening the critical linkages among education, work

and personal development. As a result learners transform experiences into existing cognitive frameworks, changing the way they think and behave. Benner and colleagues[12] indicate that experiential learning requires environments rich in performance feedback and deliberately planned opportunities for learner expression and reflection.

Similarly, constructivist pedagogy suggests that learners actively create knowledge by testing ideas, concepts and approaches based on existing knowledge and experience, while acknowledging multiple, socially constructed truths, perspectives, and realities. [13-15] Legg and colleagues[13] examined the theory's applicability to online distance education and found constructivism allows learners to take control of their learning, and educators to facilitate and guide learning. Hunter and Krantz[14] report similar findings related to a graduate nursing online course on cultural diversity and Hughes, Ventura and Dando[15] illustrate the theory's application to online, interprofessional education. Narrative pedagogy, with its emphasis on how students learn and experience thinking, is also a befitting framework for DNP student course work, as they are encouraged to pool their wisdom, challenge their preconceptions, envision new possibilities and engage with others.[16-17]

Student Video Productions

Video production consisted of three, learner-centered, faculty-guided phases:

(1)   formative phase to acquire a comprehensive understanding of the issue to determine the video purpose, objectives, audience and format,

(2)   production phase to consult and collaborate with subject matter and video production experts, and produce the video and,

(3)   evaluation phase consisting of peer review, student narrative reflection and

faculty evaluation of student work.

The course faculty decided, after much deliberation, that rather than have students select their own topics, one topic would be assigned. This was the first time such an assignment was required, making it difficult to predict resources and student-faculty time commitments. It also allowed standardization of peer review and faculty evaluation. Hand hygiene was the selected topic. Numerous factors influenced this decision including: 1) hand hygiene is a multi-dimensional topic having implication across all settings and populations, allowing for a creative, learner-centered approach, 2) all students had significant experience with the topic, 3) hand hygiene has long been regarded as the most effective measure to prevent or reduce risk of transmission of infectious agents and the consistent practice among health care providers is associated with reduction in the incidence of health care associated infections, establishing it as an important patient safety intervention,[18-19] 4) sufficient evidence existed linking the practice to patient outcomes, 5) the World Health Organization had recently launched its first Global Patient Safety Challenge titled Clean Care is Safer Care designed to galvanize action for hand hygiene at the point of care,[20] 6) hand hygiene compliance is considered a major infection control challenge in health care settings as well as school, college and community settings,[21] and 7) hand hygiene was on the minds of the local, regional and national groups due to the H1N1 influenza epidemic.

Formative Phase

Students organized into seven self-selected teams of two to three students. Students from the same organization or geographic location were encouraged to work together to produce a video for a designated institution or organization.

Working remotely from each other, students became increasingly technologically savvy as they "met" via the web. Class discussion boards and team group pages were launched to facilitate student, team and faculty interaction. The project began with students completing an extensive literature review. Hand hygiene guidelines and systematic reviews were placed in a folder on the course board providing students a starting point. Faculty facilitated consultative teleconferences giving each team time to explore ideas, seek peer feedback and have questions answered. Video planning tips were posted to the course board, reviewed with students during teleconferences and online discussion boards. During the second week of class each team submitted a one-page narrative identifying team member responsibilities, proposed video purpose and objectives, audience, timeline and team communication plan. Team progress reports were required every two weeks outlining the script, operational details and potential barriers. Faculty provided feedback on each report and increasingly encouraged the teams to use their collective knowledge, experience and resources to envision the video impact on the identified populations. Students were able to contact faculty in person, by email or phone. The University Learning Resource Center stood poised to provide expertise, equipment, and technical support, as requested.

Production Phase

Each student team independently led its own production. Faculty was available, if needed, for technical or content consultation. Students used online collaborative

technologies to plan and coordinate the production, electronic storyboards to outline the scenes and filming sequence, and video elements of music, graphics, video clips, still images, interviews and narration. Faculty recognized that students had varying degrees of skill with and access to video production equipment. Initially these potential differences in skills gave us some concern. However, similar to the reported experiences of Epstein[8], students actually sought very little help from campus support groups identified to assist them. Students were encouraged to contact and utilized workplace multi-media department if such a resource existed. Video cameras and editing equipment were available in the University Learning Resources Centers. Students were reminded that many cell phones and digital cameras are also able to record video. For editing, students were reminded that many new computers already have movie making software that has been loaded by the manufacturer. Windows computers typically have Windows Movie Maker and many Macs will have iMovie software. For students not having movie making software on their computer they were encouraged to search Download.com which has many free software programs including video editors. Financial support was not available. Students hand-delivered, mail (return receipt requested) or shipped their final video to designated faculty in the University's Academic and Instructional Support Resources Education Services group for loading into the course.

Most teams used Windows Movie Maker and iMovie software. One team created their video through computer graphics and, using Quicktime, converted into a movie format. Seven compelling 5-minute videos were created that focused on hand hygiene and interprofessional clinical teams, nurses across practice settings, multi-lingual hospital visitors, special needs students, and elementary and preschool children.

Evaluation Phase

Evaluation methods were selected based on experiential, constructivist, narrative and conventional pedagogies.[11,13-17] Collectively, the frameworks propose learner engagement through ownership, active participation, idea testing, peer-review, and reflection related to content and learning process.

1. Peer Review

Peer review is common in both the academic and healthcare environments for practitioners and increasingly in student evaluations.[22-24] The approach has been used in asynchronous, online education to involve students in the evaluation process.[15] Students find the peer review process challenging, as it makes them think more critically, as well as reflect on their own performance.[21]

Videos with the associated objectives were placed in a folder on the course board. Students had one week to view the videos and complete the faculty developed peer review tool for each video. The tool, shown in Table 1, consisted of seven questions with comment sections, related to the assignment objectives. The narrative comments indicated that the students were "amazed" by how the different teams interpreted the assignment guidelines, as well as the diversity of approaches taken to complete the assignment.

Boehm and Bonnel[25] describe the process of peer review and summarize research in the literature that document the anxiety peer review can induce in students. To help manage this anxiety, the reviews were posted by each student to the course board assignment page and kept anonymous. Anonymity encouraged reviewers to provide appropriate criticism and hopefully made the peer review a non-threatening process.

Faculty collated the peer review responses and shared and discussed the results with each

student group. The three groups receiving the highest peer review scores were

recognized in the form of congratulatory messages on the course board and "video

award" certificates mailed to their homes.

2. Narrative Reflection

Reflection encourages students to explore their interpretive thinking

experiences.[22] Itin[25] suggests that the action of education includes reflection, and

Batalden and Davidoff [10] write that experience without adequate reflection and

conceptualization is a recipe for stagnation. Faculty agreed that reflective work deepens

the understanding of the value and attitudes required for healthcare quality and patient

safety work.

Reflection occurred throughout the course via designated discussion boards, team

conference calls and a final written narrative describing the creative process, the team

process and video production process. Requiring the students to focus on the same topic

proved to be a wise choice as it provided the students and faculty common ground to

challenge their assumptions and think through and interpret the various aspects of hand

hygiene from multiple perspectives. The reflection process encouraged students to

consider how the assignment allowed them to attain advanced KSAs competencies of

evidence-based practice, teamwork and collaboration, and informatics. Student

reflections included:

> *The relevance of this assignment for a quality and patient safety course initially*
>
> *eluded me. I quickly realized that I had little knowledge of the hand hygiene*

literature, clear communication was vital, and problem solving was ongoing. It was invaluable.

It was a great experience and allowed us to develop expression of content by video, rather than the traditional scholarly paper. We demonstrated great teamwork.

Overall I enjoyed the experience. As we continue to move forward in this highly technical society, it was especially significant for me to realize that I can keep up with the technology and that you are never too old or too experienced in this field to learn something new.

The assignment proved to be interesting and educational. I must admit that my own hand hygiene practice has improved as a result of this project.

The team demonstrated a good intergenerational group effort. Despite the distance among students we were able to work well together. Our weekly telephone conferences were effective in moving the project forward. This was an exercise in thinking outside the box.

3. Faculty Evaluation of Student Work

Faculty evaluation was based on assignment objectives including: 1) knowledge, as evidenced by a comprehensive evidence-based understanding of hand hygiene and the ability to distill the related components into the most salient form for the intended

audience, 2) innovation and skill, as demonstrated by creative exploration and presentation of the topic, as well as success in capturing the topic for the selected audience, 3) impact, including the quality of expression, originality of concept and being memorable, 4) completeness, including credits or a list of cited works included at the end of the video, 5) attitude, as demonstrated by valuing continuous improvement of own communication and technology skills, and 6) dissemination plan. Faculty evaluation also included quality and completeness of peer reviews, as well as adherence to all deadlines. Table 2 outlines selected QSEN competencies and DNP student KSAs evaluation methods.

Discussion

There is minimal literature related to QSEN competency development or progression for DNP students, especially those enrolled in post-masters online distance education programs. The authors were unable to find literature related to successful QSEN competency integration in DNP programs, nor methods to help determine the extent to which these experienced students already possess the KSAs.

During the course planning phase, faculty conducted an extensive review of the literature. They found that active learning, such as this experiential innovation, is grounded in adult learning theory and promotes inquiry and skill in the process of knowledge acquisition with the emphasis on the process of learning by doing. Faculty were intrigued by the work of Scheckel and Ironside[16] and as a result decided to "try something new" by creating an assignment for students to learn the QSEN KSA's and mindfully practice interpretive thinking – thinking that is analytic, reflective and multi-perspective.

The intrinsic value of a lesson results when learning is meaningful beyond the classroom.[27] To the delight of the authors, this assignment continues a life beyond the course, as students' partner with healthcare institutions, professional organizations and schools requesting to use, edit and package their videos. One team presented their video project at a national nursing conference and another partnered with the local chapter of a national organization that provided the funds to make copies and distribute the video as part of a community-outreach initiative. The authors also had the good fortune to present this innovative teaching-learning strategy during the inaugural 2010 QSEN National Forum in Denver.

Lessons Learned

The faculty learned that the time commitment for trying something new was substantial especially considering this was one of three assignments for the course. However, a significant amount of course planning occurred making the work manageable and relatively predictable. Students, most who were enrolled in a second course and all employed full time, remained positive and engaged, which is a testament to their flexibility and quest for learning.

This assignment can be replicated for a classroom based, hybrid or purely distance education DNP program. In so doing, the following items should be considered:

- Determine availability and access to video production equipment for recording and editing the projects. You may need to form the groups based on student access to equipment. Many cell phones can now record short video segments and there are free resources for assembling and editing video content.
- Identify a topic, skill or attitude relevant to the course or a specific target audience. This can be a topic the faculty has selected or the students can propose ideas and then

vote on the one each group will actually pursue. Having all of the student groups address the same topic, skill or attitude is important to ensure students have equal access to the same resource pool and can be equally evaluated. The topic should also be something that can be accomplished in a reasonable time period. Each group can take a unique approach to the assignment.

- Instruct students to conduct a needs assessment of the target audience. They can personally interview people in the target audience or use the literature if it has already established the need for a specific group.

- Encourage students to storyboard their project. This process is easily accomplished using PowerPoint or other similar presentation tool where each of the slides/screens represents a specific screen. Students then write the dialog that goes along with that screen. Storyboards will help structure their recording tasks to make sure they get the content they need and don't waste time on unnecessary segments.

- Encourage students to meet with the instructor, teaching assistant or someone with production experience so they can explore ideas with this person for comments and suggestions. This can serve as a reality check for what is actually possible in this type of assignment and time frame. Students most common mistake is attempting to do much more than they can reasonably get done in time. Students should be encouraged to have at least three meetings (virtual, by phone or in person): an initial storyboard meeting, followed by a meeting while they're recording their scenes and then a final while they're editing their production. This will help keep students on track for completing on time.

<div align="center">Summary</div>

While the literature on healthcare quality and patient safety is expanding, there is limited literature to guide effective multi-methods teaching strategies, especially in post-masters DNP online distance education programs. This article provides a description of a successful approach to integrate the QSEN competencies of teamwork and collaboration, evidence-based practice and informatics KSAs into an existing HCQPS course. Quality and safety competency development, especially in DNP education, must be broadly defined and take into consideration the often-substantial clinical experience of students. Such a view requires a different perspective of how and what is taught, within courses and across the curricula. Creative, multiple teaching strategies must be utilized so that students can transform experiences into existing cognitive frameworks, changing the way they think and behave.

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Table 1. Student Video Peer Review Questions

Video Title Name:	Select one response
How well does the video meet the project requirements? • Accuracy • Success in capturing the topic • Quality of expression, being memorable • Originality of concept and general appeal • Inclusion of varying opinions (if applicable) Comments:	1= incomplete 2= completely meets 3= exceptional

How well does the video meet the stated objectives of the authors? Comments:	1= incomplete 2= completely meets 3= exceptional
Is the language and text in the video appropriate for the target audience? Comments:	1= inappropriate 2= questionable 3= appropriate
Are there spelling or grammar mistakes in any of the content? Comments:	1= yes, it had error 2= no errors
Are the photographs and/or graphics in the video appropriate for the target audience? Comments:	1= inappropriate 2= questionable 3= appropriate
Does the video engage the learner (e.g., encourage participation) in anyway? Comments:	1= passive 2= enjoyable 3= engaging
How creative is the video? Comments:	1= not at all 2= somewhat 3= extremely
Additional Thoughts and Comments:	

Table 2. Selected QSEN Competencies and DNP Student KSAs Evaluation Methods

QSEN Competency: Teamwork and Collaboration

Definition: Function effectively with nursing and interprofessional teams, fostering open communication, mutual respect, and shared decision-making.

Knowledge	Skills	Attitudes
Analyze own strengths, limitations and values as a member of a team* *(Self Reflection).*	Continuously plan for improvement in use of self in effective team development and functioning* *(Self Reflection and Peer Review).*	Acknowledge own contributions to effective or ineffective team functioning* *(Self Reflection and Peer Review).*
Describe impact of own communication style on others* *(Self Reflection and Peer Review).*	Solicit input from other team members to improve individual, as well as team, performance* *(Self Reflection and Peer Review).*	Value different styles of communication* *(Self Reflection and Peer Review).*
	Demonstrate skills in peer-review that promote a culture of excellence** *(Self-Reflection)*	Respect the unique attributes that members bring to a team, including variation in professional orientations, competencies, and accountabilities* *(Self*

		Reflection and Peer Review).
	Demonstrate skills in negotiating, consensus building and partnering** *(Self Reflection and Peer Review).*	
QSEN Competency: Evidence-based Practice Definition: Integrate best current evidence with clinical expertise		
Knowledge	**Skills**	**Attitudes**
Identify efficient and effective search strategies to locate reliable sources of evidence* *(Systematic review of hand hygiene literature).*	Exhibit contemporary knowledge of best evidence related to practice specialty* *(Systematic review of hand hygiene literature).*	Value knowing the evidence base for practice specialty* *(Self Reflection and Peer Review).*
	Disseminates evidence from inquiry using multiple methods to diverse audiences** *(Abstract submissions and poster presentations at national*	Value the need for continuous improvement in clinical practice based on new knowledge* *(Systematic review of hand hygiene literature, Self*

	conferences and showing videos at institutions and organizations).	*Reflection)*
QSEN Competency: Informatics Definition: Use information and technology to communicate, manage knowledge, mitigate error, and support decision-making.		
Knowledge	**Skills**	**Attitudes**
Contrast benefits and limitations of common information technology strategies used in the delivery of patient care* *(Self Reflection, Peer Review, Video Production).*	Communicate the integral role of information technology in nurses' work* *(Self Reflection and Peer Review).*	Value the use of information and communication technologies in patient care**(Video Production)*
	Anticipate unintended consequences of new technology* *(Self Reflection and Peer Review).*	Appreciate the time, effort, and skill required for computers, databases, and other technologies to become reliable and effective tools for patient care* *(Self Reflection, Peer Review, Video Production*
	Translate technical and	

	scientific health information appropriate for user need** (video production)	

*Taken from Cronenwett L, Sherwood G, Pohl J, Barnsteiner J, Moore S, Sullivan DT, et al. Quality and safety education for advanced nursing practice. Nurs Outlook 2009;57:338-348.

** Taken from Pohl JM, Savin C, Fiandt K, Beauchesne M, Drayton-Brooks, Scheibmeir M, et al. Quality and safety in graduate nursing education: cross mapping QSEN graduate competencies with NONPF's NP core and practice doctorate competencies. Nurs Outlook 2009;57:349-354.

NOTE: the authors used these as skill items, not knowledge items.