The Need for Critical Thinking & Team Building Skills in Nursing Programs

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Abstract

The Affordable Care Act of 2010 is causing a major overhaul of the United States healthcare system. Nursing will be a major player in this change. Nursing educators must meet the challenge to educate future nurses in this environment. The Quality and Safety Education for Nurses project was founded by the Robert Wood Johnson Foundation to address these challenges. Six competencies were identified to transform nursing education toward increased quality and safety. Evidence-based recommendations to teach critical thinking skills and implement team building into the nursing curriculum were made to help transform nursing education to meet the challenges of these competencies. Jean Watson’s theory of caring is highlighted as a caring framework for these immense changes.

*Keywords: Affordable Care Act, QSEN, critical thinking, team building, Watson*

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The 2010 Affordable Care Act initiated a massive overhaul of the healthcare system in hopes of providing safer, patient-centered, more accessible and affordable healthcare (Institute Of Medicine [IOM], 2010). The profession of nursing must examine where it fits in and how it must change to meet these demands (Stokowski, 2011). Nursing education is the foundation of nursing, therefore must be at the forefront of these changes.

The Quality and Safety Education for Nurses (QSEN) project was founded in 2005 by the Robert Wood Johnson Foundation (RWJF) to address the need for change within nursing education (Bednash, Cronenwett, & Dolansky, 2013). The QSEN project built upon the IOM’s five competencies for all healthcare personnel, adding patient safety to the list. The QSEN’s six competencies include: patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, patient safety, and informatics (QSEN Institute, 2013). These competencies are “designed to build will and ideas for transforming nursing education through curricula that support learning of the quality and safety competencies called for by the IOM” (Cronenwett, Sherwood, & Gelmon, 2009, p. 304).

Including critical thinking and team building activities into a nursing education curriculum fosters essential skills the nursing student will need to develop the QSEN competencies in their practice. These competencies are necessary for each nurse to be part of the national initiative to improve quality and safety in our healthcare system. Jean Watson’s Theory of Caring will be used as a framework to embrace building caring relationships with others and using creative problem-solving methods for caring, critical thinking decisions. The purpose of this essay is to explore the changing environment of nursing education and propose the need to teach critical thinking and team building skills in a nursing school curriculum.

**Changing Environment of Nursing Education**

The 2010 Affordable Care Act was passed 100 years after the death of Florence Nightingale, the founder of the formal nursing school (Stokowski, 2011). Nursing education has come a long way since Nightingale, yet has a long journey ahead, responsible for educating nurses with the competencies needed to function in the current healthcare environment. Nursing educators must look beyond the nurse-patient relationship to a more expansive view of the health care system which includes quality, safety, and a team approach. The changing needs of the nursing education system are varied and substantial.

The RWJF at the IOM released a report titled *The Future of Nursing: Leading Change, Advancing Health (2011),* which states major changes in the United States health care system will require an equally profound change in nursing education. Although the primary goal of nursing education remains the same; to meet the distinct needs of the patient, develop nursing leaders, and utilize evidence based research to deliver safe, quality patient care, the new reality of healthcare depends on the transformation of the roles and responsibilities of nurses.

The QSEN initiative was developed in 2005 by the RWJF in response to IOM reports that expressed the need for critical core knowledge in healthcare professions education (Barton, Armstrong, Preheim, Gelmon, & Andrus, 2009). A recurring theme in these reports included the necessity to improve health profession education in relation to safety and quality improvement. QSEN’s primary goal is to “address the challenges of preparing future nurses with the knowledge, skills, and attitudes necessary to continuously improve the quality and safety of the health care systems in which they work” (Sullivan, Hirst, & Cronenwett, 2009, p. 323). The six QSEN competencies are challenging educators to deliver nurses prepared to integrate quality and safety with a multi-disciplinary approach (Madhavanpraphakaran, 2012).

**Patient-Centered Care**

This QSEN competency recognizes that the patient or guardian is an equal partner with healthcare team members, having influence in their own care based on respect for their personal preferences, values, and needs (Preheim, Armstrong, & Barton, 2009). When teaching patient-centered care, the instructor must emphasize the need for combining skills with patient preferences, including involvement of family, providing emotional support, and coordinating care. NLN competency one*, Facilitate Learning*, mirrors patient centered care with respect to using personal attributes such as caring and flexibility to facilitate learning (NLN, 2007). Jean Watson identifies the need for caring moments with co-workers, fellow students, and patients (Watson, 2013). Teaching students to remember to choose a caring moment will foster patient-centered care in new nurses.

**Teamwork and Collaboration**

 The new view of teamwork involves successfully functioning within an interdisciplinary team, including open communication, mutual respect, and collective decision making (Preheim et al., 2009). Nurses frequently are at the center of communication within the team, thus effective communication skills are absolutely essential. NLN competency five, *Function as a Change Agent and Leader,* advocates students learn to participate in interdisciplinary efforts to address needs and to develop leadership skills to implement change (NLN, 2007). Several of the caritas processes of Jean Watson’s theory of caring are appropriate in team building including practicing kindness with self and others, being sensitive to other’s beliefs and practices, developing helping, trusting, and caring relationships, accepting positive and negative feelings as you listen to one another, and using creative critical thinking skills to make caring mutual decisions (Watson, 2013).

**Evidence-Based Practice**

Nurse educators seek to pass on long held beliefs and practices while providing the student with solid scientific knowledge (Robinson & Dearmon, 2013). However the incorporation of current evidence is an integral part of quality and safe care (Preheim et al., 2009). Modern classrooms must teach the fundamentals of nursing within the context of current research. Many nursing skills such as urinary catheter placement and peripheral intravenous insertion have current recommendations based in research.

NLN competency three, *Use Assessment and Evaluation Strategies,* elicits the use of current evidence-based assessment and evaluation practices (NLN, 2007). Evidence-based practice can be used in the clinical setting, yet also in the classroom, utilizing new strategies to assess and evaluate learning. Nursing has increasingly become a caring discipline guided by theory and evidence-based practice (Watson, 2012). Theory-guided, evidence-based practice models, inspired in part by the American Nurses Credentialing Center’s national Magnet® program, have fostered improved patient care and outcomes.

**Quality Improvement**

Quality Improvement involves much more than revising policies and procedures (Preheim et al., 2009). The QSEN model of quality improvement urges the use of data to verify patient outcomes, and designing and testing changes to perpetually improve quality and safety in the healthcare system. Adverse event reporting systems and lifesaving checklists should be implemented early in the process. Root cause analyses are necessary to improve quality and enhance patient safety. NLN competency six, *Pursue Continuous Quality Improvement* *in the Nurse Educator Role* recognizes the role the nurse educator plays in promoting quality improvement. As an educator nurses must demonstrate a commitment to life-long learning and use feedback to improve the quality of the role. Educators involved in personal pursuit of quality improvement will pass on the need for quality development in their student’s careers. The theory of caring embraces the sharing of teaching and learning, which improves quality of care for the nurse and the patient (Watson, 2013).

**Safety**

A culture of safety has enveloped the healthcare system and led to a great challenge facing health care (Christiansen, Prescott, & Ball, 2013). In 1999 the IOM released a shocking report titled *To Err is Human: Building a Safer Health System* (Institute of Medicine [IOM], 1999). This report specified that at least 44,000 – 98,000 people die in hospitals each year as a result of medical errors that could have been prevented. The toll of these errors goes beyond the loss of human live. The estimated financial costs totaled between 17 billion and 29 billion dollars per year nationwide. These errors were also costly in terms of loss of trust and decreased satisfaction by both patients and health care personnel. Fast forward to 2013, the Centers for Medicare and Medicaid Services (CMS) are promoting high-quality and patient-centered care and accountability by reporting outcomes for several diseases including pneumonia and heart failure, to increase hospital transparency (Centers for Medicare & Medicaid Services [CMS], 2013). In addition hospitals will be paid according to how well they perform on certain quality measures and 30 day readmission rates.

 A culture of safety must be embraced in a healthcare institution not only for patient protection but for viability of the institution. Promoting a team approach and encouraging effective communication skills is essential in creating a safety climate (Preheim et al., 2009). Furthermore, critical thinking skills help nurses tackle the challenges of today’s technological environment and help safeguard positive outcomes for patients (Robert & Petersen, 2013). NLN competency one, *Facilitate Learning*, encourages teaching critical thinking skills and creating opportunities for learners to develop critical thinking and reasoning skills. NLN competency four, *Participate in Curriculum Design and Evaluation of Program Outcomes*, supports the need to base curriculum design on current health care needs and trends (NLN, 2007). It is imperative that nursing educators use current evidence and research to prepare nurses to function in the current health care arena.

**Informatics**

The QSEN model calls for expanding the use of information and technology to communicate, manage knowledge, diminish errors, and encourage safe decisions (Preheim et al., 2009). The electronic health record is increasingly used in health care institutions. Nursing schools are compelled to decide what aspects of technology to include in their curriculum. The need to teach critical thinking skills is highlighted with the use of technology. As healthcare becomes more complex, the importance of critical thinking is necessary to navigate the environment (Chan, 2013).

 NLN competency one, *Facilitate Learning*, fosters the use of information technology to support the teaching-learning process (NLN, 2007). In addition competency seven, *Engage in Scholarship*, encourages the nursing instructor to design and implement scholarly activities in an established area of expertise. Creating activities to learn critical thinking skills or new technological advances requires the educator to engage in that scholarly activity and fosters personal learning (NLN, 2007). There are many aspects to meet the growing and evolving demands of the role of the nurse educator. Employing the QSEN competencies, through a caring framework to the nursing curriculum and in a nurse’s personal practice will help this specialty role to meet these needs.

**Recommendations for Nurse Educators to Practice in a Changing Environment**

The QSEN competencies highlight the need for change in a complex and demanding healthcare environment. The NLN competencies can be used as a foundation to advance this transformation. Within the competencies, nurse educators are encouraged to use knowledge of current trends and issues, participate in interdisciplinary efforts to address health care and educational needs, and participate in curriculum design and evaluation (NLN, 2007). Incorporating critical thinking skills and team building into the nursing education program will improve the competence and confidence of the new graduate in functioning as a healthcare team member. This competence and confidence can translate to improved patient outcomes and efficiency in the professional practice environment (Chan, 2013).

**Critical Thinking Skills**

Nursing schools are striving to meet the growing demand for nurses educated with the expertise to allow them to work in the current, ever-changing health care arena (Yuan, Williams, & Fan, 2008). According to Chan (2013), there is an increased need for patient-centered care, evidence-based practice, and patient satisfaction as the healthcare environment becomes even more complex and demanding. These recurring themes are represented in the QSEN competencies, founded to address the need for change in nursing education based on quality and safety (QSEN Institute, 2013). Nurses must develop critical thinking skills to provide them with the foundation to practice in this changing environment, and nursing programs must strive to develop this skill in students (Yuan et al., 2008). Nursing education can facilitate the development of students’ critical thinking skills through appropriate instructional strategies.

 **Simulation.** High fidelity patient simulation has increasingly become more sophisticated in the health care setting (Goodstone et al., 2013). It is also becoming the standard for clinical teaching and learning. The use of patient simulators helps bridge the gap between the classroom and what actually happens in clinical practice (Goodstone et al., 2013). According to Goodstone et al. (2013), an emphasis on critical thinking skills with simulation has helped create a desired outcome of a more clinically confident nursing student with demonstrated critical thinking skills.

 Goodstone et al. (2013) conducted a quasi-experimental study utilizing a convenience sample of first semester associate degree nursing students. One group received weekly high fidelity patient simulation while the other group received weekly case studies. Both groups took a pre- and post-test using the Health Studies Reasoning Test. This study concluded that both groups experienced an increase in critical thinking skills and although there was a slightly greater increase in the simulation group, it was not statistically significant. This study showed both high simulation and low simulation activities can increase needed critical thinking skills in nursing students.

However a different study by Shinnick & Woo (2012) demonstrated that simulation is an effective learning modality for pre-licensure nursing students. This study also distinctly identified the value of simulation on students who did not already have excellent critical thinking skills. This is exciting news for nurse educators, as this demonstrates that high fidelity simulation can aid a student who is flourishing, yet also benefit one that may be struggling.

A quantitative study undertaken to investigate the effect of simulation on nursing students’ critical thinking scores also found an increase in these scores based on the Health Sciences Reasoning Test (HSRT) (Sullivan-Mann, Perron, & Fellner, 2009). This study found adding three additional simulation scenarios, in addition to the usual two, led to an increase in scores on the HSRT. This study offered strong quantitative evidence that the use of simulation in a nursing education environment is beneficial. Nurse educators must continue to emphasize the importance of offering simulation in nursing programs to enhance needed critical thinking skills.

 **Concept map.** Concept mapping is an effective teaching and learning strategy for both instructors and students to assess what the student has learned (Lee et al., 2013). According to Lee et al. (2013), concept maps are organized with general concepts at the top of a hierarchy followed by more specific concepts. The relationships between concepts are indicated with cross-links or arrows. Through the mapping process students can examine their current knowledge and learn how to think in a more critical and complex way (Lee et al., 2013).

 In a quasi-experimental, longitudinal, follow-up designed study, Lee et al. (2013) found that utilizing concept mapping as a teaching strategy had a positive effect on critical thinking, implying this method may help students learn how to think more critically. Another descriptive, comparative study found the use of concept mapping in novice graduate nurses improved critical thinking skills in a hospital orientation program (Wilgis & McConnell, 2008). Shuster’s Concept Map Care Plan Evaluation Tool was modified to assess the graduate nurses’ critical thinking in using concept maps based on case studies. This evaluation tool was given at the beginning and end of orientation and was found to be a valuable teaching and evaluation strategy to improve critical thinking and identify areas of theoretical and clinical need (Wilgis & McConnell, 2008).

 **Problem-based learning.** Problem-based learning (PBL) is an approach to learning which is student-centered and allows the students to work in small groups to search for solutions to problems or situations (Yuan et al., 2008). The groups must discuss together what information is needed to identify the problem, understand it, and collectively come to a solution (Yuan et al., 2008). A systematic review of available research including randomized controlled trials, nonrandomized controlled trials, quasi-experimental studies, qualitative studies, and descriptive studies, found PBL challenged students to seek solutions to real-world problems in a group setting (Yuan et al., 2008). The students perceived they developed more effective communication and critical thinking skills. However, the lack of large randomized controlled trials did not allow the review to support these findings. In a different systematic review and meta-analysis, the conclusion was that the PBL approach was an effective learning technique that supported the development of critical thinking, leadership, and teamwork skills (Kong, Qin, Zhou, Mou, & Gao, 2013). However this study also called for the need for larger randomized controlled trials to confirm or refute their findings.

 **Reflective writing.** According to Naber & Wyatt (in press), the concept of critical thinking has been recognized as an essential outcome for students of all disciplines, yet it is not known how best to teach these skills. An experimental pre-test, post-test design was used to test the effectiveness of a reflective writing intervention (Naber & Wyatt, in press). Reflective writing is “the purposeful and recursive contemplation of thoughts, feelings, and happenings that pertain to significant practice experiences known as exemplars or critical incidents” (Kennison, 2012, p. 306). Reflection can also examine interaction amongst colleagues and co-workers, pinpoint gaps in knowledge, recognize errors, and manage difficult situations (Kennison, 2012).

The study intervention consisted of six reflective writing assignments given to an experimental group in the first eight weeks of the semester (Naber & Wyatt, in press). The group consisted of juniors in a baccalaureate nursing program, while a control group attended the same program without the reflective writing assignments. The remainder of the semester the group did the required classwork. The study found the reflective writing intervention contributed to an increase in truth-seeking amongst the participants. The conclusion was that reflective writing may help nursing students seek evidence based knowledge and communicate more effectively with other health care professionals (Naber & Wyatt, in press).

**Team-building**

Recent implementation of the 2010 Affordable Care Act, has caused health care providers and policy makers to be more aware that cooperation and teamwork will be necessary to provide safe and quality care to patients (The Inter-professional Education Collaborative [IPEC], 2011). The IPEC is a collection of six national associations of health professions schools, including the American Association of Colleges of Nursing, working together to promote inter-professional learning experiences (IPEC, 2011). Most professionals in the IPEC panel believe health profession students must be educated in a way that encourages collaboration, communication, and teamwork, in order to provide the complex care to today’s population (IPEC, 2011).

 In this climate of disease prevention, reimbursement cuts, and an emphasis on quality and safety, teamwork is going to be essential. IPEC developed core competencies in four domains to ensure students had the foundation needed to function as part of an inter-disciplinary team while providing patient-centered collaborative care (IPEC, 2011). The four domains are:

* Values/Ethics for Inter-professional Practice – acting with honesty and integrity in patient, family, and team member relationships and respecting the dignity and privacy of patients while preserving confidentiality (IPEC, 2011).
* Roles/Responsibilities for Collaborative Practice – effectively communicate roles and responsibilities to patients, families, and team members and explain the roles of other care providers and how the team works together (IPEC, 2011).
* Inter-professional Communication – choosing effective communication skills to assist discussions that enhance team function and giving timely, thoughtful, and constructive feedback to others in a caring and thoughtful way (IPEC, 2011).
* Inter-professional Teamwork and Team-based Care – involve other health professionals, when appropriate in collaborative patient-centered problem solving and reflect on improving performance of both the individual and team (IPEC, 2011).

Nursing educators are challenged to meet the demands of this new healthcare environment. In addition to teaching necessary fundamental and critical thinking skills, team-building is also essential. The following strategies can be used by nurse educators to incorporate team-building in nursing programs.

**Effective communication skills.** Communication is of utmost important between all health-care professionals and their patients. When healthcare teams bond together, communication failures and catastrophic mistakes are less likely to occur (O’Daniel & Rosenstein, 2008). Very simply, communication failures create favorable conditions for medical errors. Communication can range from hand off report, taking an order over the phone, or a lack of communication as in a nurse too uncomfortable to speak up in a difficult situation.

 A study sought to measure the effects of teaching communication skills via small groups or web-based learning (Artemiou, Adams, Vallevande, Violato, & Hecker, 2013). This case comparison study randomly assigned students to one of three groups; control, web, or small group, to study which was more effective in teaching communication skills. A communication skills class was delivered via the web or in small groups in which students could collaborate. The study results showed that the small group scored significantly higher on the Objective Structured Clinical Exam (OSCE), which measured communication competence. The web based group also scored significantly higher than the control group but not as high as the small group did.

 Another study used a quasi-experimental, two group, post-test design to examine the effectiveness of role-playing in pre-professional sophomore nursing students (Zavertnik, Huff, & Munro, 2010). This study allowed the intervention group to actively engage in communication during role play and to receive feedback and coaching. The control group did not participate in the role playing activities. The intervention group scored significantly higher on a standardized grading tool utilized for this study.

 Nursing educators must weave necessary communication skills education into an already tight curriculum. Using evidence-based research, the strategies of teaching communication skills in small groups and assisting in role play activities within the school environment will enhance the communication skills necessary for team building. Safe patient care relies on this effective communication.

**Team training programs.** Quality of care, patient outcomes, and facility reputation depend on how well health care members work together (O’Daniel & Rosenstein, 2008). Successful teams are founded in trust, respect, and collaboration (O’Daniel & Rosenstein, 2008). Team training programs can promote this mutual trust and respect and therefore impact patient outcomes and facility status.

According to IPEC (2011), nursing faculty will need guidance and would ideally be able to collaborate with professionals and have additional resources available on how best to administer team training programs. However funding is needed to support these educational initiatives as many educational programs find the expense would be a substantial hurdle to overcome. Nevertheless, institutions can utilize some aspects of team training within current budgets.

 Team building exercises can include basic exercises such as role play where a student plays the role of a health care member interacting with another health care member (Nursing Uniforms, 2013). Another implementation which fosters interpersonal relationships is encouraging students to interact inside and outside of the classroom. In addition, speaking with staff members at clinical sites to warmly welcome the students will encourage team building and foster open communication. Lastly, teaching nurses to respect differences is an important aspect of team building (Nursing Uniforms, 2013).

 A more complex example of team training includes medical team training for specific goals. A retrospective health services study was conducted by the Veteran’s Health Administration (Neily et al., 2010). Their objective was to determine whether an association existed between a Medical Team Training program and surgical outcomes. The operating room (OR) was closed so all surgical staff could attend a one day program utilizing the crew resource management theory of aviation, adapted for healthcare. OR personnel were coached to work as a team, challenge each other when safety risks were identified, and direct checklist driven preoperative briefings and postoperative debriefings. Furthermore communication strategies were taught including how to conduct effective communication between caregivers. This program was associated with a statistically significant reduction in the surgical mortality rate.

 Team training exercises are known to reduce risk and increase patient safety (Neily et al., 2010). The most basic to the more complex team training programs are all useful in attaining this goal. Nursing educators are challenged to implement team building skills through team training and effective communication.

**Conclusion**

The healthcare environment is changing faster than ever before. The passage of the Affordable Care Act of 2010 is fueling even faster changes with goals of safer patient-centered care, and more affordable and accessible healthcare. Nursing will play a major role in the health care system overhaul but must examine what that role will be. Nursing education must be at the forefront of these changes in order to educate the nurses needed to function in this evolving environment.

 The QSEN initiative was founded to address the need for change in nursing education toward a safer, quality driven curriculum. The six competencies were developed by the QSEN project to address the need to prepare future nurses with the knowledge, skills, and attitudes necessary to improve quality and safety in our healthcare system. The nursing education system is challenged with incorporating these competencies into the nursing school curriculum.

 Recommendations were made to assist the nurse educator in implementing these competencies. Research has found teaching critical thinking skills through simulation, reflective thinking, concept mapping, and problem-based learning will help nursing schools meet the growing demand for nurses educated to practice in a challenging environment. Additionally, the team building techniques of teaching effective communication and implementing team training programs have been found to increase quality and safe care for patients. Jean Watson’s theory of caring can be used as a framework to guide educators in meeting these challenges in a caring atmosphere.

References

Artemiou, E., Adams, C. L., Vallevande, A., Violato, C., & Hecker, K. G. (2013). Measuring the effectiveness of small-group and web-based training methods in teaching clinical communication: a case comparison study. *Journal of Veterinary Medicine Education*, *40*(3), 242-251. http://dx.doi.org/10.3138/jvme.0113-226R1

Barton, A. J., Armstrong, G., Preheim, G., Gelmon, S. B., & Andrus, L. C. (2009). A national delphi to determine developmental progression of quality and safety competencies in nursing education. *Nursing Outlook*, *57*(6), 313-322. http://dx.doi.org/10.1016/j.outlook.2009.08.003

Bednash, G. P., Cronenwett, L., & Dolansky, M. A. (2013). QSEN transforming education [Editorial]. *Journal of Professional Nursing*, *29*(2), 66-67. http://dx.doi.org/10.16/j.profnurs.2013.03.001

Centers for Medicare & Medicaid Services. (2013). Outcome measures. Retrieved from http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/OutcomeMeasures.html

Chan, Z. C. (2013). A systematic review of critical thinking in nursing education. *Nurse Education Today*, *33*, 236-240. http://dx.doi.org/10.1016/j.nedt.2013.01.007

Christiansen, A., Prescott, T., & Ball, J. (2013). Learning in action: Developing safety improvement capabilities through action learning. *Nurse Education Today*. http://dx.doi.org/10.1016/j.nedt.2013.07.008

Cronenwett, L., Sherwood, G., & Gelmon, S. B. (2009). Improving quality and safety education: The QSEN learning collaborative. *Nursing Outlook*, *57*(6), 304-312. http://dx.doi.org/10.1016/j.outlook.2009.09.004

Goodstone, L., Goodstone, M. S., Cino, K., Glaser, C. A., Kupferman, K., & Dember-Neal, T. (2013). Effect of simulation on the development of critical thinking in associate degree nursing students. *Nursing Education Perspectives*, *34*(3), 159-162. Retrieved from http://www.nln.org/nlnjournal

Institute Of Medicine. (2010). *The future of nursing: Focus on education* [Report brief]. Retrieved from http://www.iom.edu/Reports/2010/The-Future-of-Nursing-Leading-Change-Advancing-Health/Report-Brief-Education.aspx

Institute of Medicine. (1999). *To err is human: Building a safer health system*. Retrieved from http://www.iom.edu/Reports/1999/to-err-is-human-building-a-safer-health-system.aspx

Kennison, M. (2012). Developing reflective writing as effective pedagogy. *Nursing Education Perspectives*, *33*(5), 306. Retrieved from http://www.nln.org/nlnjournal

Kong, L., Qin, B., Zhou, Y., Mou, S., & Gao, H. (2013). The effectiveness of problem-based learning on development of nursing students’ critical thinking: A systematic review and meta-analysis. *International Journal of Nursing Studies*. http://dx.doi.org/10.1016/j.ijurstu.2013.06.009

Lee, W., Chiang, C., Liao, I., Lee, M., Chen, S., & Liang, T. (2013). The longitudinal effect of concept map teaching on critical thinking of nursing students. *Nurse Education Today*, *33*(10), 1219-1223. http://dx.doi.org/10.1016/j.nedt.2012.06.010

Madhavanpraphakaran, G. K. (2012). Patient safety and nursing education. *International Journal of Nursing Education*, *4*(2), 92-96. Retrieved from http://www.indianjournals.com

Naber, J., & Wyatt, T. (in press). The effect of reflective writing interventions on the critical thinking skills and dispositions of baccalaureate nursing students. *Nursing Education Today*. Retrieved from http://www.nurseeducationtoday.com/

National League for Nursing. (2007). *The scope of practice for academic nurse educators*. New York, NY: National League for Nursing.

Neily, J., Mills, P. D., Young-Xu, Y., Carney, B., West, P., Berger, D. H., ... Bagian, J. (2010). Association between implementation of a medical team training program and surgical mortality. *Journal of American Medical Association*, *304*(15), 1693-1700. http://dx.doi.org/10.1001/jama.2010.1506

Nursing Uniforms. (2013). A nurse’s world. Retrieved from http://www.nursinguniforms.net/blog/how-to-encourage-team-building-amongst-nurses

O’Daniel, M., & Rosenstein, A. H. (2008). Patient safety and quality: An evidence-based handbook for nurses. In R. G. Hughes (Ed.), *Professional communication and team collaboration* (Ch. 33). Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK2637/

Preheim, G. J., Armstrong, G. E., & Barton, A. J. (2009). The new fundamentals in nursing: Introducing beginning quality and safety education for nurses’ competencies. *Journal of Nursing Education*, *48*(12), 694-697. http://dx.doi.org/10.3928/01484834-20091113-10

QSEN Institute. (2013). Competencies. Retrieved from http://qsen.org/competencies

Robert, R. R., & Petersen, S. (2013). Critical thinking at the bedside: Providing safe passage to patients. *MedSurg Nursing*, *22*(2), 85-118. Retrieved from http://www.medsurgnursing.net

Robert Wood Johnson Foundation at the Institute of Medicine. (2011). *The future of nursing: Leading change, advancing health*. Retrieved from http://www.thefutureofnursing.org/sites/default/files/Future%20of%20Nursing%20Report\_0.pdf

Robinson, B. K., & Dearmon, V. (2013). Evidence-based nursing education: Effective use of instructional design and simulated learning environments to enhance knowledge transfer in undergraduate nursing students. *Journal of Professional Nursing*, *29*(4), 203-209. http://dx.doi.org/10.1016/j.profnurs.2012.04.022

Shinnick, M. A., & Woo, M. A. (2012). The effect of human patient simulation on critical thinking and its predictors in prelicensure nursing students. *Nurse Education Today*, *33*(9), 1062-1067. http://dx.doi.org/10.1016/j.nedt.2012.04.004

Stokowski, L. A. (2011). Overhauling nursing education. Retrieved from http://www.medscape.com/viewarticle/736236

Sullivan, D. T., Hirst, D., & Cronenwett, L. (2009). Assessing quality and safety competencies of graduating prelicensure nursing students. *Nursing Outlook*, *57*(6), 323-331. http://dx.doi.org/10.1016/j.outlook.2009.08.004

Sullivan-Mann, J., Perron, C. A., & Fellner, A. N. (200*9*). The effects of simulation on nursing students’ critical thinking scores: A quantitative study. *Newborn & Infant Nursing Reviews*, 9(2), 111-116. http://dx.doi.org/10.1053/j.nainr.2009.03.006

The Interprofessional Education Collaborative. (2011). *Team-based competencies: Building a shared foundation for education and clinical practice*. Retrieved from www.aacn.nche.edu/education-resources/IPECProceedings.pdf

Watson, J. (2012). Viewpoint: Caring science meets heart science: A guide to authentic caring practice. *American Nurse Today*, *7*(8). Retrieved from http://www.americannursetoday.com

Watson, J. (2013). Theory of human caring. Retrieved from http://www.watsoncaringscience.org/index.cfm/feature/84\_12/theory-of-human-caring.cfm

Wilgis, M., & McConnell, J. (2008). Concept mapping: An educational strategy to improve graduate nurses’ critical thinking skills during a hospital orientation program. *Journal of Continuing Education*, *39*(3), 119-126. http://dx.doi.org/10.3928/00220124-20080301-12

Yuan, H., Williams, B. A., & Fan, L. (2008). A systematic review of selected evidence on developing nursing students’ critical thinking through problem-based learning. *Nurse Education Today*, *28*(6), 657-663. http://dx.doi.org/10.1016/j.nedt.2007.12.006

Zavertnik, J. E., Huff, T. A., & Munro, C. L. (2010). Innovative approach to teaching communications skills to nursing students. *Journal of Nursing Education*, *49*(2), 65-72. http://dx.doi.org/10.3928/01484834-20090918-06