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Conducting a Shared Mental Model of Student Evaluation: Implications for Nurse Educators

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Enhancing Interprofessional Education Using Simulation Videos:

A Nursing Education Perspective

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Abstract

Interprofessional education simulations can help to clarify roles and responsibilities of team members, and increase student's interprofessional communication skills. Teaching students to communicate and interact in interprofessional teams is supported by the World Health Organization, Institute of Medicine, American Nurses Association, and the accrediting bodies of medicine, nursing, pharmacy, respiratory care, and physical therapy. This paper outlines three applications in nursing education for using interprofessional education simulation videos. Each application addresses aspects of the *Interprofessional Education Collaborative Core Competencies* (Interprofessional Education Collaborative, 2016). These interprofessional education simulations provide students with opportunities to learn the roles and responsibilities of other healthcare professions, gain interprofessional communication skills, and learn teamwork and leadership skills.

Keywords: nursing, interprofessional education, simulation, videos

Enhancing Interprofessional Education Using Simulation Videos:
A Nursing Education Perspective

Nurses and other healthcare professionals practice in an environment requiring knowledge of the roles and responsibilities of other healthcare professions, the skills of interprofessional (IP) collaboration and communication, and skills of teamwork and leadership. To introduce nursing students to IP practice, faculty must provide opportunities for students to engage in IP collaboration and teamwork. This paper will discuss the significance of interprofessional education (IPE) for nursing students, how simulations are used in IPE, and suggest three ways to use IP simulation videos in nursing education practice.

Background

Interprofessional education can be defined as “occurring when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes” (World Health Organization [WHO], 2010, p. 13). Interprofessional education is encouraged by many healthcare organizations, including the American Nurses Association (ANA), Institute of Medicine (IOM), National League for Nursing (NLN), and the WHO. Language from accrediting bodies for medicine, nursing, pharmacy, and physical therapy include statements regarding the ability to perform as part of an interdisciplinary team, and include statements related to IPE (Zorek & Raehl, 2013). The Commission on Accreditation for Respiratory Care (CoARC, 2015) entry into practice standard 4.05 states “Graduates must be able to function within inter-professional teams” (p. 32).

Interprofessional education is not a new concept. Teams of physicians, social workers, and health educators worked together in outpatient clinics at Massachusetts General Hospital as early as 1915 (Grumbach & Bodenheimer, 2004). During the 1970s, IP teamwork in the United

States became more accepted and students learned to appreciate the contributions, knowledge, and skills brought by other disciplines (Eisler & Potter, 2014). According to Palaganas, Epps, and Raemer (2014), “interprofessional education has been gradually recognized as essential to patient safety and is becoming a standard for healthcare education” (p. 114). Healthcare providers participate in IP education by taking basic or advanced cardiac life support classes (American Heart Association, 2017).

Support for IPE can be found in the Triple Aim of the Institute for Healthcare Improvement (IHI, 2017). The three dimensions of the Triple Aim are: improving the patient experience of care (including quality and satisfaction), improving the health of populations, and reducing the per capita cost of healthcare. Interprofessional education supports all dimensions of the Triple Aim. The objectives of IPE are to prepare students to be ready to practice in collaborative teams upon graduation, to optimize the skills of members, to promote collaboration on case management, and to improve the quality of health services (Buring et al., 2009).

The Essentials of Baccalaureate Education for Professional Nursing Practice (American Association of Colleges of Nursing [AACN], 2008) provides “curricular elements and framework for building the baccalaureate nursing curriculum” (p. 3) and the “outcomes expected of graduates of baccalaureate nursing programs” (p. 3). Essential VI. Interprofessional Communication and Collaboration for Improving Patient Health Outcomes, associates teamwork with high quality, safe care, effective communication, understanding the roles of team members, and being an advocate on the IP team, (pp. 22-23).

Core Competencies of Interprofessional Education

Four IP Core Competencies (hereafter, CC) are identified by the Interprofessional Education Collaborative (IPEC, 2016, p. 10).

- CC 1: Values/Ethics for Interprofessional Practice is focused on values and ethics, high standards, and trusting relationships for IP practice.
- CC 2: Roles/Responsibilities is focused on roles and responsibilities to promote and advance the health of populations.
- CC 3: Interprofessional Communication is focused on IP communication, language, respect, and information.
- CC 4: Teams and Teamwork is focused on teams, teamwork, and leadership for collaborative practice and patient/population centered care.

Collaborative practice is defined by the WHO (2010) as “when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, carers and communities to deliver the highest quality of care across settings” (p. 13). Each competency is divided into sub-competencies. This information is useful for academic nurse educators who wish to incorporate IPE and the IPEC CC into the curriculum.

Nursing and the Interprofessional Education Collaborative Core Competencies

Nurses embody the four CC. To exhibit CC 1: Values/Ethics, nurses must “Act with honest and integrity in relationships with patients, families, communities, and other team members” (IPEC, 2016, p. 11). For the 15th year in a row nurses ranked as the most honest and ethical profession (Gallup, 2017, para. 1). The profession holds high standards that patients and the public trust. The ANA (2015) *Code of Ethics for Nurses* states, “the nurse creates an ethical environment and culture of civility and kindness, treating colleagues, coworkers, employees, students, and others with dignity and respect” (p. 4).

In CC 2: Roles/Responsibilities, nurses need to know the roles and responsibilities of other professionals to be able to coordinate care (ANA, 2017, para. 1). According to Wilhaus et

al. (2013), “in general, practitioners have a limited understanding of each other’s roles and responsibilities and limited recognition of their own personal limitations within their role and how this may impact patient care/outcomes” (p. 53). Wilhaus et al. (2013) note recommendations from nursing representation at the symposium include “develop a simulation-based model for IPE/IPP” (p. 4).

Communication with IP team members, active listening, and using effective communication tools and techniques form the foundation of CC 3: Interprofessional Communication. Communication is acknowledged as a contributing factor to errors in healthcare (Joint Commission Resources, 2015; McCulloch, Rathbone, & Catchpole, 2011; Shannon, 2015). Multiple communication techniques are used throughout healthcare to encourage and facilitate communication among team members, and to help alleviate errors. Examples of IP communication techniques include Situation, Background, Assessment, Recommendation (SBAR) communication, Computer Provider Order Entry, Surgical Time Out, and TeamSTEPPS. Using these methods of communication is intended to increase clarity of communication and decrease communication errors that occur between teammates, and should lead to safer patient care (Joint Commission Resources, 2015; Shannon, 2015).

As part of CC 4: Teams/Teamwork, nurses and all other healthcare professionals must be prepared to work in IP teams. Interprofessional collaboration has been shown to improve access to and coordination of health services, health outcomes for patients with chronic diseases, patient care and safety (WHO, 2010, p. 18). Strong IP collaboration can also save money by decreasing hospital admissions, length of stay, mortality rates, total patient complications, and staff turnover (WHO, 2010, p. 18). According to the WHO (2010), “research evidence and experience have

demonstrated that a team-based approach to health-care delivery maximizes the strengths and skills of each contributing health worker” (p. 21).

Interprofessional Education and Collaboration

Literature about IP interaction and collaboration often focuses on the nurse/physician dyad (Booth & McMullen-Fix, 2012; McCulloch et al., 2011; Swift & Stosberg, 2015). A clear example of the nurse/physician dyad is described by Lancaster, Kolakowsky-Hayner, Kovacich, and Greer-Williams (2015), “as a game that nurses played in which they did not confront physicians directly about patient care issues; they made subtle suggestions” (p. 282). While the nurse/physician dyad relationship has improved somewhat it continues to be a struggle in nursing (Lancaster et al., 2015). According to Eisler and Potter (2014), “too often a physician assumes leadership of an IP team without the input of the other professions on the team. In these situations, if a physician is on the team, that physician assumes she or he will lead” (p. 240). This focus may be due to the historic imbalance of power in the relationship between physicians and nurses.

According to Wilhaus et al. (2013), “health profession’s education currently offers limited opportunities for practiced interaction with students of other disciplines. Simulation offers an opportunity to address these needs” (p. 19). Opportunities for IPE for nursing students should focus on the most likely avenues for interaction during the academic program, and the most frequent interactions nurses have during professional encounters. The strengths and leadership skills gained from those interactions should lead to increased confidence and abilities to apply those skills to interactions with all professionals (AACN, 2008).

Integrating Simulation

Simulation in healthcare can be defined as “a technique (not a technology) to replace and amplify real experiences with guided ones” (Lateef, 2010, p. 348). Simulation is an activity that represents or mimics another. The use of simulation in healthcare education “enables healthcare students to rehearse and refine the skills and holistic practices of their discipline” (Kelly, Berragan, Hubsbø, & Orr, 2016, p. 319). The National Council of State Boards of Nursing (2016) Simulation Guidelines for Prelicensure Nursing Education Programs allow for simulation to replace up to 50% of clinical experiences.

Simulation is used in aviation and in the military. Pilots in WWI learned to fly using the Link trainer (Lateef, 2010; Link Simulation & Training, 2017). According to Aebersold (2016), nurses are trained using some of the same principles that are used for training pilots: allowing team members to train together, the importance of safety, learning technical skills, learning teamwork skills, and applying critical thinking (p. 57).

Integrating IP simulation is a natural fit with the goals of IPE and nursing. According to the Society for Simulation in Healthcare (2017), “simulation is the imitation or representation of one act or system by another. Healthcare simulations can be said to have four main purposes - education, assessment, research, and health system integration in facilitating patient safety” (About Simulation, para. 1). The IOM (2003) report, *Health Professions Education: A Bridge to Quality*, states “health professionals are asked to work in interdisciplinary teams . . . yet they are not educated together or trained in team-based skills” (p. 2). The IOM (2003) calls for “all health professionals to be educated to deliver patient-centered care as members of an interdisciplinary team” (p. 121). By integrating IP simulation, healthcare education professionals are helping students become part of an interdisciplinary team.

The History of Simulation and Interprofessional Education

Simulation has been used in aviation and military training to increase proficiency and skill while learning in a safe environment. Simulation is used in healthcare in the same manner. Simulation was introduced into healthcare during the 1800s as partial task trainers to learn a skill, such as performing a tracheotomy (Palaganas et al., 2014). During the 1900s, simulation continued as mannequins were used, the 1940s saw the advent of standardized patients, the 1960s brought high- and low-technology mannequins, the 1970s more partial task trainers, and on to current high-tech, high-fidelity mannequins being used alongside some of the previous iterations of simulation, (p. 111). According to Palaganas et al. (2014), simulation-enhanced IPE “first emerged in the 1950s and presented as computerized simulations for sociology, psychology, behavioral sciences and organization theory” (p. 112).

Interprofessional Education Simulations

Nurses interact with other health professions daily by communicating patient needs, providing patient updates, interpreting lab results, and communicating and directing work flow. All nurses should know how to appropriately and successfully communicate with other health professions, and how to interact within IP teams. Interprofessional simulations can provide the ideal environment for IP communication and teamwork skills that nursing students and students in other disciplines need to enable them to function as practice ready IP team members upon graduation.

There are many recommendations for incorporating IPE into nursing education (ANA, 2008; INACSL, 2016; NLN, 2015b). According to Al-Elq (2010), simulations should be “carried out by a team from the same or different specialties or professions in a simulated environment made to resemble the intended environment as closely as possible in order to immerse students in

an experience closest to real life” (p. 36). Therefore, IPE experiences in nursing education should include opportunities for nurses to work with a variety of disciplines. The IPE simulation environment offers unique opportunities for IPE in a situation that is similar to practice.

Significance and Implications for Nurse Educator Practice

Nurse educators prepare students to care for complex patients in complex, ever changing environments. Nursing students need to be able to effectively communicate not only with patients, but also with other professionals. The WHO (2010) states that students who engage in IPE are more likely to engage in collaborative practice (p. 17) and that collaborative practice leads to better patient outcomes (p. 18). Nurse educators can prepare students for IP practice by providing students with significant learning experiences in an IP environment.

According to Fink (2013), the first three steps of significant learning are foundational knowledge, application, and integration (pp. 43-50). Once a student is introduced to a topic or concept, the next step is reinforcing and integrating the knowledge with clinical practice. The student must be able to remember the information received and be able to apply the information to real-life situations. In IPE, the student begins to “look at problems from the perspectives of two or more disciplines and who can interact effectively with individuals who represent different perspectives and disciplines” (Fink, 2013, p. 49). Interprofessional simulations align well with the first three steps of significant learning.

Nursing Education Applications for Interprofessional Education Simulation Videos

Three possible applications for using IP simulation are described in this section. Each application includes debriefing. Debriefing is where reflection and learning are cemented (Dreifuerst, 2009; NLN, 2015a). According to Dreifuerst (2009), “debriefing offers a way to draw out student thinking and help students develop their complex decision-making skills . . .

Debriefing as teaching strategy supports a constructivist theoretical framework within problem-based learning experiences” (p. 110). Debriefing tools such as Debriefing Assessment for Simulation in Healthcare (DASH, Todd, Manz, Hawkins, Parson, & Hercinger, 2008), InCITE Clinical Debriefing Tool (Wilson, 2013), Debriefing for Meaningful Learning (DML, Dreifuerst, 2009), Promoting Excellence and Reflective Learning in Simulation (PEARLS, Cheng et al., 2016), and structured debriefing provide the means to promote significant learning (NLN, 2015a).

Application One: Students Participating in Interprofessional Simulation

The first application to incorporate IP simulation shows videos of students participating in an IP simulation. This helps students identify their roles, the roles of other disciplines, and the areas of role overlap. It could be used to identify examples of appropriate IP communication. The introduction to IP simulation gives students an idea of what they will be doing during IP simulation, what the process might be, and what to expect during their IPE simulations. According to Decker et al. (2015), best practices for IPE simulation should “promote collaborative, interprofessional teamwork and effective communication” (p. 295). After viewing the video of an IP simulation faculty would debrief the students using one of the debriefing tools described above.

This application addresses each of the IPEC (2016) core competencies (p. 10). The aim of CC 1: Values/Ethics is to respect the unique characteristics and expertise of each discipline, to respect the patient and to respect the family. With CC 2: Roles/Responsibilities, professionals are to recognize the uniqueness of team members and to use those abilities to the benefit of the patient and the team. During the debrief period students reflect on what changed in their perception of other professions, what they learned about the roles and responsibilities of other

professions, and if the students' respect or appreciation for the other profession has been enhanced.

Core Competency 3: Interprofessional Communication addresses the importance of communication within an IP team. The video gives examples of appropriate IP communication, providing students the opportunity to model themselves after this example, and using IP communication to promote health, maintain health, or prevent and treat disease. Core Competency 4: Teams/Teamwork pulls together all aspects of working on an IP team. During the debrief students discuss and reflect on respectful language, active listening, giving opinions, and how working in IP teams can impact patient care.

Application one requires students to watch a video that depicts simulation-enhanced IPE in a patient care setting. The evaluation of application one could be determined by a combination of a pre-test/post-test of IP roles, responsibilities, and communication, the debriefing results, student survey, or an IP quiz.

Application Two: Varying Levels of Interprofessional Collaboration

A second application for incorporating IP simulation is for students to view three IP simulation videos showing levels of IP collaboration. One video would be an example of moderate or mixed collaborative effort, one of poor collaboration, and one of excellent collaboration. These videos could be used by different disciplines at later dates. Students would view the videos one at a time, and then debrief by discussing examples of moderate, poor, or excellent IP collaboration. Faculty could use an IP simulation debriefing format like the ones suggested above. An alternative is one video with all three levels of IP teamwork and collaborative effort with built in pauses where the video is stopped for debriefing and discussion.

Application two is different in how it approaches each of the CCs. In the poor and moderate collaborative effort video examples, it might be that the CC 1: Values/Ethics is not being applied. Examples might be: the culture of the patient or a team member may be treated disrespectfully, the expertise of an IP team member may not be respected, the privacy and dignity of a patient may not be respected, or there may be an ethical dilemma where an IP team member acts dishonestly. During the debrief, the issues of disrespect and unethical or inappropriate behavior would be clarified, so when students engage in IPE simulations (or in clinical practice) they are aware and practice in a respectful, ethical, and appropriate manner.

For CC 2: Roles/Responsibilities, the poor and moderate collaborative effort video examples might have poorly differentiated roles between nurses and other disciplines, or examples where care is duplicated or missed. Students might be confused about the person who is the nurse and the person who is another team member. Other examples could include unsafe care or care that is outside of scope of practice. During the debrief, these roles, responsibilities, and scope of practice issues would be clarified. Then, when students engage in IPE simulations (or in clinical practice), they are aware and practice in a safe manner.

The poor and moderate video examples would provide opportunities for students to identify inappropriate IP communication (CC 3) during debriefing. Students could discuss and reflect on the video demonstrations of effective communication techniques, how understandable and clear the communication is. During debriefing students can discuss and reflect on whether team members are listening to each other and whether the language is respectful and professional.

The poor and moderate collaborative effort video examples would demonstrate many aspects of the importance of CC 3: Interprofessional Communication and CC 4:

Teams/Teamwork. As communication problems and role issues arise and compound, teamwork would suffer. Students would see how poor teamwork and collaboration affects a patient centered focus of care and problem solving. During the debrief, students could identify how team effectiveness was impaired and reflect on the performance and ideas for improvement.

Videos which demonstrate poor IP teamwork and collaboration (Trent Simulation & Clinical Skills Centre, 2015) and excellent IP teamwork and collaboration (Center for Interprofessional Education at Virginia Commonwealth University, 2015) are available on YouTube. The videos available on YouTube are examples of code situations, rather than examples of the IP teamwork and collaboration situations that students are more likely to encounter during typical simulation scenarios or clinical rotations. Examples of moderate or mixed collaborative effort videos proved difficult to find.

To show videos of typical IPE simulation scenarios, videos could be produced by the user school, with their current IPE simulation scenarios. Faculty or senior year baccalaureate students portray the various disciplines involved, role-playing varying levels of collaboration. Students or faculty from electronic media studies could produce the high-quality videos. One benefit is all videos show typical IPE simulation scenarios for the user school, and realistic situations that the students would encounter in those scenarios. Another benefit is the videos would demonstrate varying levels of IP teamwork and collaboration, which is foundational to application two. The videos could be used in all participating discipline areas from year to year, or if the videos are of sufficiently high-quality they might be used by other schools for the same purpose. The evaluation of application two could be determined by a combination of a pre-test/post-test of IP roles, responsibilities, and communication, the debriefing results, student survey, or an IP quiz.

Application Three: Faculty Development of a Shared Mental Model for Evaluation

A third application of using IPE simulation videos is to assist in faculty development of a shared mental model (SMM) of simulation assessment and evaluation. One definition of a SMM is “individually held knowledge structures that help team members function collaboratively in their environments and are comprised of the attributes of content, similarity, accuracy and dynamics” (McComb & Simpson, 2014, p. 1485). A SMM is a collaborative definition and agreement among team members of the framework or knowledge structure which does not strictly dictate how the team or health system functions, or how individual members within the team function, only that the SMM facilitates agreement and the use of common definitions. A SMM in assessment and evaluation benefits students and faculty by providing more structure in a subjective situation. According to Fritz (2017),

Students need to know that faculty members are applying the same evaluative criteria in a fair and equitable manner when evaluating performance, and that it is not luck or chance that determines whether the student will have a faculty member who will evaluate the students in a fair and equitable manner. A SMM of subjective evaluation can help assure that students are being evaluated in a fair and equitable manner, where faculty have a comparable understanding of criteria and terminology to apply in subjective evaluations. (pp. 23-24)

Videos from the first two scenarios could be included for this process. Faculty from each discipline could view videos on their own. A stepped process for developing a SMM in high-stakes nursing simulation has been suggested by research conducted by Kardong-Edgren, Oermann, Rizzolo, and Odom-Maryon (2017). In step one, faculty are trained on the use of an evaluation tool and coached in applying evaluation criteria. In step two, faculty viewed and rated

simulation videos. Results were analyzed and the faculty met to discuss differences in ratings to work towards development of a SMM. Step three involved continued viewing and rating to establish a SMM. According to Kardon-Edgren et al. (2017), participants needed to view and rate 11 videos to develop a SMM. Eleven videos were needed to view and rate to develop a SMM from a study conducted by Rizzolo et al. (2015, p. 301).

Application three incorporates CC 1: Values/Ethics by helping participants to develop a trusting relationship with other faculty team members, and acting with honesty and integrity in those relationships. This application incorporates CC 2: Roles/Responsibilities because team members are engaging in professional development to enhance team performance.

Core Competency 3: Interprofessional Communication addresses the importance of communication within an IP team. Faculty need to encourage ideas and effectively communicate their opinions with each other to help reach a SMM. Feedback needs to be sensitive, instructive, and respectful, and language needs to be respectful and appropriate.

Core Competency 4: Teams/Teamwork is also evident in application three. Faculty would be able to describe the process of team development. The faculty team members become involved in managing disagreements about values and goals while developing a SMM. Finally, as part of the process to develop a SMM, team members engage in self-reflection to improve performance to reach a SMM.

One benefit to application three is the videos can be used in all participating health professions to develop a SMM for evaluation. Ironically, this can be done independently of the other disciplines. If discussions are held by each health profession and then the entire group reconvenes to share results, it allows the opportunity to have interdisciplinary engagement about

subjective evaluations and definition of terms. The skills faculty learn in developing a SMM to evaluate the videos can be used in other subjective evaluations.

Conclusion

Healthcare professionals work in IP environments that require teamwork, collaboration, and communication skills (Eisler & Potter, 2014). Healthcare providers participate in IPE when learning basic and advanced life support skills. Interprofessional education has become increasingly important for healthcare educators (Palaganas et al., 2014). Interprofessional education simulations provide students with realistic IP experiences where faculty have control of the scenario, guide the students through the simulation, facilitate the students' self-reflection, and guide debriefing following the simulation (Palaganas et al., 2014). Nurse educators can use IPE simulation videos to introduce IP simulation to students, and to demonstrate poor, moderate and excellent examples of IP collaboration. These IPE simulation videos provide students with opportunities to clarify IP values and ethics, learn the roles and responsibilities of other healthcare professions, develop IP communication skills, and learn teamwork and leadership skills. Healthcare faculty can use IPE simulation videos to develop a SMM to use for IP student evaluation.

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