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Implementing a Preceptor Toolkit and Eliminating the Barriers to Student Evaluations

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Implementing a Preceptor Toolkit and Eliminating the Barriers to Student Evaluations

DNP Project
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of the Requirements for the Degree of
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St. Catherine University
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Abstract

Nurse Anesthesia Programs rely on Certified Registered Nurse Anesthetists (CRNA) to precept students and evaluate student's skills. Though CRNAs precept students, their training is not in evaluation methodology and they do not feel qualified to perform student evaluations. This DNP project identified preceptors' opinions about precepting students, and areas of concern in communicating with students and evaluating student competency. A communication and an evaluation tool were selected and a literature review was performed. The One-Minute Preceptor and the Dreyfus Five-Stage Model of Adult Skills Acquisition were combined into a Preceptor Toolkit and presented as teaching aids to preceptors. After preceptors received the education module, a post-implementation survey was created to gauge if there were changes in preceptor's opinions of precepting and evaluating students. The results from the follow-up survey were unchanged from the results of the initial survey. There were no differences recorded in preceptor's opinions from before the Preceptor Toolkit presentation to the follow-up survey after the presentation.

Keywords: clinical evaluation, one-minute preceptor, skills acquisition model, Student Registered Nurse Anesthetist

Implementing a Preceptor Toolkit

and Eliminating Barriers to Student Evaluations

Every day, thousands of surgical and patient-care procedures are performed. Most of those procedures require the benefit of an anesthetic, and every anesthetic requires an anesthesia provider. To meet the demand for anesthesia care, Nurse Anesthesia Programs (NAP) train and equip providers with specialized didactic and clinical education. Didactic education is performed in a classroom setting; clinical education is conducted in real-time with patients in hospitals and clinics. Due to the number of students and clinical sites required to meet the needs of healthcare demands, NAP cannot rely solely on professors of anesthesia to train anesthesia providers. Nurse Anesthesia Programs require the help of clinicians to educate students in clinical settings.

Certified Registered Nurse Anesthetists (CRNA) are advanced-practice nurses trained in providing anesthesia. As one of the primary providers of anesthesia, CRNAs are regularly requested to perform as preceptors for anesthesia students. Precepting activities include providing advanced-practice nursing education such as teaching skills, modeling professional behavior, and evaluating students (Easton, O'Donnell, Morrison, & Lutz, 2017).

Most CRNAs, though clinical experts, are not educated in pedagogy or evaluation methodology (Bott, Mohide, & Lawlor, 2011). The potential consequences of lacking those educational skills contribute to gaps in the student evaluations and omissions in the education process (Yonge, Myrick, & Ferguson, 2011). This Doctor of Nursing Practice (DNP) project was crafted to survey CRNAs concerns about precepting and evaluating students. An opinion survey was used to direct a literature review of communication and evaluation methods. The evidence-based teaching modules, the One-Minute Preceptor and the Dreyfus Five-Stage Model of Adult

Skills Acquisition were incorporated into a Preceptor Toolkit and presented to the CRNAs to enhance preceptorship skills.

Background & Significance

Anesthesia is vital to the surgical process. Many procedures could not be performed without the benefit of analgesia, amnesia, loss of consciousness, and muscle relaxation (Miller & Pardo, 2011). Fortunately, anesthesia services are available. However, those services require the use of potent medications and complex procedures by highly trained professionals.

In the United States, there are different types of anesthesia providers, distinguished by educational backgrounds. Anesthesiologists are medical doctors who have completed a residency in anesthesia. Certified Registered Nurse Anesthetists are registered nurses who have graduated with an advanced degree from an accredited NAP and have passed the National Certification Examination administered by the National Board of Certification and Recertification of Nurse Anesthetists (NBCRNA, 2017).

The education for a CRNA is currently obtained from either a master or doctoral program. Nurse Anesthesia Programs focus on pharmacology, physiology, anesthesia principles, research methodology, and patient care. Training is completed in compliance with the Council on Accreditation (COA) Standards (COA, 2017). Just as didactic requirements are determined by the COA, so are the clinical experiences. The COA requires a minimum number of patient contact hours and specifies the number and types of cases that must be performed before graduation (COA, 2017).

The NAP located in the Midwest, where this DNP project was initiated is currently advancing from a master's level to a doctoral level education. The program admits approximately 30 students yearly and runs for 36 months. The Tertiary Care Hospital (TCH) where this Doctor of Nursing Practice (DNP) project was completed is one of 25 clinical sites in

partnership with this NAP. The other 24 sites, where NAP students learn clinical skills and hone

anesthesia education, are spread across numerous states. Students are in the clinical phase for

approximately two years (COA, 2017).

The clinical program in this NAP is not unique in anesthesia education. Most NAPs

partner with numerous hospitals. Abundant access to operating rooms is imperative to provide

sufficient surgeries, procedures, and preceptors to ensure that students get enough experience to

meet requirements for certification. The vast number of sites required creates the situation where

professors cannot physically teach at every location. By working in collaboration with area

hospitals, NAPs use CRNAs as preceptors to train and evaluate anesthesia students, thereby

guaranteeing that the COA's requirements are satisfied.

Though anesthetists are highly trained clinicians, most CRNAs have a limited amount of

education in teaching or evaluating students (West et al., 2009). Therein lies the problem:

without the benefit of an educational background preceptors are uncertain of how to correctly

perform student evaluation. Many of the student daily clinical evaluations required by the NAP

were returned partially completed, or returned completed but not according to the NAP's

requirements.

Needs Assessment

The Standards for Accreditation from the Council on Accreditation of Nurse Anesthesia

programs (2017) specify that institutions providing anesthesia education must perform two types

of evaluations. Summative evaluations, used to determine graduation requirements and formative

evaluations used for counseling and documenting student's achievements (COA Standards,

2017). Clinicians often feel uncertain about evaluating student competency; many fear

retributions from angry students and may resent a perceived lack of support from faculty when

giving a student a bad evaluation (Walsh, Seldomridge, & Badros, 2008). To align with the

COA's evaluation requirements and to help preceptors evaluate students, a communication tool

and an evaluation tool were reviewed and incorporated into a Preceptor Toolkit to educate

preceptors and improve the process of student evaluations.

Problem Statement

The NAP is dependent on CRNAs to act as preceptors for anesthesia students. Though

CRNAs are highly-trained advanced-practice providers, most are not trained educators (Easton et

al., 2017). Mummah (2006) found that when schools used clinicians rather than educators to do

evaluations, regardless of the form used, there were barriers to performing evaluations. These

barriers present two significant concerns: first, that student performance is not documented

accurately, and second, that students lose learning opportunities when clinicians are hesitant to

write corrective assessments or fail to give feedback.

When evaluations are not performed correctly, faculty have limited knowledge of student

performance, good or bad. Tailoring assignments for students is difficult if no educators know

the student is struggling. One solution to resolving known deficiencies is the creation of a toolkit

(Collins, S. & Faut Callahan, 2014). A toolkit is a collection of teaching models or strategies

specially compiled to resolve a known deficiency. In this project the toolkit was designed to help

resolve deficiencies in student evaluations.

Theoretical Framework

The Competency Outcomes and Performance Assessment model (COPA; Lenburg,

Abdur-Rahman, Spencer, Boyer, & Klein, 2011) is used in education to determine techniques

and systems that identify the competencies necessary to perform before entering professional

practice. The goals of the COPA framework are to define core competencies, to measure

outcomes, to incorporate interactive learning strategies, and to conduct objective course

evaluations. These goals were incorporated into the design and methods underpinning this DNP

project.

The COPA model was designed around successful performance evaluation methods and

is specifically intended to promote competence in clinical practice. The Competency Outcomes

and Performance Assessment model was adapted to this DNP project, and all four goals in the

framework are evident in the assessment tool used by the NAP (see Appendix A for the Mount

Marty College-Nurse Anesthesia Program Daily Clinical Evaluation Report). The core

competencies are listed on the form under criterion. Outcomes are measured, and students are

assessed on a continuum from novice to proficient. The evaluation process is interactive between

preceptors and students with opportunities for verbal and written feedback, and grading

competency on the anesthesia form is synonymous with conducting objective course evaluations

in COPA.

Project Purpose and PICO Question

The purpose of this DNP project was to determine what the CRNA preceptors at a

Midwestern TCH considered to be barriers to performing student evaluations and create an

evidence-based solution to those barriers. To guide a literature review focused on evaluation

barriers a PICO question was designed. PICO is the acronym that stands for patient problem,

intervention, comparison, and outcome, and the PICO question for this DNP was: For anesthesia

preceptors, will the utilization of a resource toolkit minimize the barriers to completing student

evaluations and increase the percentage of evaluations performed?

Methodology

Pre-implementation Survey

The data collection for this DNP project consisted of two descriptive surveys. The surveys were created by the DNP student and structured using Dillman's (2007) design methods. The survey questions were reviewed for validity by experts in the fields of education and anesthesia. The surveys were formatted for SurveyMonkey by the hospital's nurse educators and delivered through the hospital's intranet system. The Institutional Review Board (IRB) approval (HHS.gov. 2010) was granted by St. Catherine University and the TCH.

Both surveys were web-based and consisted of Likert-type and open-ended questions. The initial, or pre-implementation, survey (see Appendix B for the Initial Survey) contained 16 items: 11 Likert scale questions centered on precepting and evaluating students; 4 demographic questions determining age, gender, education level, and years of experience; and 1 open-ended question asking for suggestions to improve the NAP's student clinical evaluation process.

This DNP project focused on a convenience sample of the CRNA preceptors at one specific TCH who are responsible for precepting and evaluating Student Registered Nurse Anesthetists (SRNA) in the clinical portion of the NAP. Convenience sampling, targeting specific populations, and designing unique questions are advantages to using surveys in research (Dillman, 2007). With permission from the TCH, all 55 of the CRNA preceptors were offered surveys. Two surveys, the initial survey and the post-implementations survey, were presented to every anesthetist, offering all staff an equal opportunity to participate. Preceptor involvement in this quality improvement project was voluntary and anonymous. Participants were allowed to complete the surveys while working however, no compensation was offered to preceptors for participation.

An informed consent was developed and approved with cooperation between the TCH and St. Catherine University. The Project description and informed consent were delivered to CRNA preceptors via the TCH's organization email system for access from work computers. The online survey became active after participants checked a box that demonstrated informed consent was obtained. The informed consent (see Appendix C), one pre-survey alert (see Appendix D), the survey, and a 14-day post-survey follow-up and thank you (see Appendix E) were sent via email to all CRNA preceptors.

The initial, or pre-implementation survey was intended to determine CRNA's opinions about precepting and evaluating students. The survey revealed that preceptors had concerns about a communication gap between clinicians and students and about performing student evaluations on the NAP's evaluation form. A review of communication and evaluation strategies was conducted to identify evidence-based solutions that were used to develop a Preceptor Toolkit. The Toolkit was presented to the CRNAs at a continuing education meeting.

The final, or post-implementation (see Appendix F) survey was intended to determine if the CRNAs' perceptions about precepting and evaluating students changed after learning how to use the Preceptor Toolkit. The day following the toolkit presentation, the post-implementation survey was delivered to the staff by email. Approximately three weeks after the surveys were delivered, a follow-up reminder was sent. The follow-up email expressed gratitude for completion of the survey, and encouraged preceptors to complete the survey if they had not done so (Dillman, 2007). The surveys remained open for five weeks until no new surveys returned. Data from the initial survey were compiled, and the descriptive statistics, median and range, were calculated. The Likert-type answers were graphed, and the employee responses were

reviewed and categorized. The responses were organized into topics to be considered for inclusion in the Preceptor Toolkit.

Toolkit Development

The goal of the DNP project was to find a resolution to the TCH's student evaluation concerns. An anonymous survey of the CRNA preceptors at the TCH revealed the preceptor's opinions about precepting and what staff perceived as barriers to evaluating anesthesia students. The survey's short-answer segment revealed that CRNAs wanted information on communicating with students and needed clarification from the NAP on defining student competencies. A literature review on communication models revealed the One-Minute Preceptor (OMP) as a favorable solution. The OMP was included in the Toolkit because it has been shown to enhance learning and improve preceptor-student communication through a structured five-step process (Neher & Stevens, 2003). The initial two steps require preparation and decision-making from the student. These actions enhance learning through self-directed study on the part of the student and interactive dialogue between the preceptor and the student. Steps three, four, and five allow a platform for preceptor instruction, reinforcement, and correction (Swartz, 2016).

The NAP uses an evaluation tool they designed around the Dreyfus Five-Stage Model of Adult Skills Acquisition (Dreyfus, 2004). Therefore, the DNP project included the Dreyfus model in the literature review. The Dreyfus model, also known as the Skills Acquisition Model (SAM), was included along with the OMP to create the Preceptor Toolkit. Since the student evaluations created from the SAM and performed by preceptors, were not completed to the NAP's specifications, it was important to determine if a more in-depth understanding of the SAM and an explanation of how to correctly fill-out the evaluation form would improve the student evaluation process.

Combining the OMP and the SAM created an education module on communication and evaluation. The combination has been deemed a Preceptor Toolkit and is being used by the TCH as a required component of yearly competency training. The Toolkit has been presented in-person in lecture format, and it has been viewed as a voice-over PowerPoint by staff during working hours.

Review of Literature

For NAPs, clinicians, specifically CRNAs, are an essential part of the core teaching staff. Many CRNAs serve as preceptors, staff who work with and guide students, helping to educate and facilitate the learning process. As a part of the responsibilities, preceptors evaluate student performance through either formative or summative evaluations, or both (Seldomridge & Walsh, 2006). This NAP's evaluation forms are patterned after the Dreyfus Five-Stage Model of Skills Acquisition, also known as the Skills Acquisition Model (SAM). The evaluations are performed daily for the first few weeks of the clinical phase, and the frequency decreases incrementally the longer the student is in the program.

Many clinicians feel unqualified to evaluate students. Concerns include a lack of a teaching education (Bott et al., 2011), time constraints (Yonge, Myrick, & Ferguson, 2011), communication barriers, or a lack of valid and reliable tools on which to perform written evaluations (Seldomridge & Walsh, 2006). Due to those constraints, NAPs receive many evaluations from preceptors partially completed, or not completed according to the NAP's specifications. Without quality formative evaluations the student's education may not achieve full potential. To facilitate preceptorship for CRNAs, and eliminate the barriers to performing the evaluations returned to the NAP, this DNP project created a Preceptor Toolkit. The toolkit

consists of the One-Minute Preceptor (OMP) (Neher & Stevens, 2003) and the SAM (Dreyfus, 2004).

One-Minute Preceptor

   Search strategy for the One-Minute Preceptor. To research the usefulness and validity of the OMP, a literature search was performed using the CINAHL Complete, MEDLINE, Psych INFO, ERIC, and Health Resource databases. The combined terms *one-minute preceptor* and *anesthesia* were entered into the search lines for *all text* and *title*. The initial OMP search returned 196 articles; of the original result, 83 contained the words one, minute, and preceptor in the title, abstract, or body and were not duplicate entries. From the cache of 83, the titles and abstracts were scrutinized, articles unrelated to the One-Minute Preceptor were eliminated. Fourteen articles were retained for full review and inclusion in the project. An ancestry search of the references identified three unique articles related to the One-Minute Preceptor. No additional related articles were discovered resulting in a total of 17 to be included as supporting evidence. The 17 articles were evaluated using The Johns Hopkins Hospital/The Johns Hopkins University Evidence Level and Quality Guide© (2017), (used with permission). There were a variety of evidence-levels represented, including Level I randomized controlled trial (RCT) studies, Level II systematic literature reviews, Level III nonexperimental studies, Level IV consensus panels, and Level V literature reviews. Articles contained recommendations (Bott et al., 2011), criticisms, and limitations (Parrott, Dobbie, Chumley, & Tysinger, 2006). All articles were judged as quality A or B. A being high quality; the results are consistent and generalizable. Recommendations made from A quality articles are based on thorough evidence and exhaustive literature reviews. B is good quality, the results are reasonably consistent, study size is adequate, and the literature review is reasonably widespread (Johns Hopkins, 2017).

Origin of the One-Minute Preceptor. A relatively new education model has emerged from learning styles which evolved over the past few decades. Education has advanced from the traditional lecture to physician-prepared ward rounds and is now an interactive process exemplified by the OMP (Leinster, 2009). Rather than students being passive recipients of knowledge, the OMP places students in an active-learner role in the clinical environment (Parrott et al., 2006). The OMP was created from a compilation of established theories. Specially designed for adult learners, the teaching strategy draws heavily on Malcolm Knowles' theory of andragogy, Jerome Bruner's constructivism, and Schon's theory of reflective practice (Kertis, 2007). Andragogy is specifically the concept of teaching to the ways adults learn versus pedagogy, the study of teaching in general. Constructivism was built on the idea that people learn new ideas based on experience and understanding. The concept behind reflective practice is that people engage in active learning by attending to the concepts behind everyday interactions (Kertis, 2007).

The OMP is a five-step teaching model that, for instructional purposes, can be broken down into: "(a) Get a commitment; (b) Probe for supporting evidence; (c) Teach general rules; (d) Reinforce what was done right; and (e) Correct mistakes" (Swartz, 2016, p.391). Different from traditional lecture or ward-rounds, in the OMP the student assesses the patient first, then consults with the preceptor. The preceptor and student, both knowledgeable of the patient's history, discuss the patient's status and determine together how best to proceed with patient-care (Neher & Stevens, 2003). With the student's initial assessment and plan-of-care, the OMP helps the preceptor evaluate both the patient's status and the student's comprehension of the scenario as it unfolds (Kertis, 2007). This novel teaching method is innovative because it is one of the first teaching styles centered on the learner's needs (Neher & Stevens, 2003).

The OMP is useful in directing patient care, promoting clinical skills, and helping

students cultivate critical-thinking skills. Since every patient's illness presents a unique

challenge, the initial assessment and the dialogue between the preceptor and the student changes

with each scenario (Kertis, 2007). The precepting tool pushes students beyond existing comfort

levels (Irby, Aagaard, & Teherani, 2004; Neher & Stevens, 2003) and promotes learning,

challenging students to study more, and encouraging students to come to the clinical site better

prepared (Neher & Stevens, 2003). In the next few paragraphs, the OMP will be discussed in

step by step manner.

Step 1: get a commitment. In practical application, Steps 1 and 2 of the OMP build on

the student's knowledge reserves (Kertis, 2007), and engage individual students at the

appropriate level of education (Aagaard, Teherani, & Irby, 2004; Neher & Stevens, 2003). Step 1

informs the preceptors to have the student commit to an idea or answer. That is accomplished by

asking a lead-in question. This encounter compels the student to commit to their beliefs by

forcing the student to put specific thoughts into words. For instance, the preceptor may ask,

"What do you think about the lab results for the patient in Room 2?" Or, "How would you

proceed, given what we know about this disease?"

Step 2: probe for supporting evidence. During Step 2 the instructor asks more involved

questions. Since the student has already studied the material and has assessed the patient's status,

this phase requires the student to go one step deeper in the critical-thinking process (Aagaard et

al., 2004). Step 2 forces the student to explain why the initial question was answered in a

particular manner. To draw out that information, the instructor will ask a probing question such

as; "What are you basing your decision on?" or "What evidence do you have to support your

decision?" This step encourages students to reach higher levels of critical-thinking and move

past remembering basic information. Step 2 pushes students to interpret and integrate findings, to

dictate action, and eventually to predict results (Weitzel, Walters, & Taylor, 2012).

      Step 3: teach general rules. A significant amount of teaching occurs in Step 3 (Irby et

al., 2004). The preceptor-student interchange is built upon the current scenario and the student's

knowledge. Step 3 gives the preceptor an opportunity to assimilate everything the student has

shared and craft a case-specific response. The OMP fosters teaching concepts that are

immediately applicable to both the patient and the student (Kertis, 2007). Should a gap in a

student's knowledge remain, the preceptor can give instruction or direct the student to find

answers from available resources (Kertis, 2007).

      According to Bott et al. (2011), one caution should be observed while using the OMP to

teach clinical skills. Instructors are cautioned to avoid over-teaching. Over-teaching is teaching

more than three rules in one learning exchange. With increased stress comes the inability to

assimilate large amounts of new information. Under the stressful situations of real-time clinician-

student discussions, students can only retain small amounts of new information, excess

information is not processed well and may be lost from memory (Neher & Stevens, 2003).

      Step 4: reinforce what was done right. In Step 4 instructors are encouraged to evaluate

what students have said and what actions should be performed (Kertis, 2007). This step is where

preceptors emphasize what the student has completed correctly. It is important for the student,

who is experiencing performance-related stress, to be encouraged by what has been

accomplished correctly. Positive feedback improves self-esteem and confidence and encourages

the reproduction of successfully performed maneuvers (Kertis, 2007; Seldomridge, 2006). If it is

necessary to provide negative feedback, the negative response should be sandwiched between

positive ones. Concluding an evaluation on a positive note motivates students to try again.

Step 5: correct mistakes. Further learning occurs in Step 5 as instructors are directed to correct any answers that were incorrect or incomplete (Kertis, 2007). At this point, clinicians may make direct comments to correct errors. Another suggestion to enhance learning is for students to practice self-reflection; this technique requires the student to assess the situation and critique answers and responses. Recognizing mistakes is a concrete way for students to learn (Neher & Stevens, 2003). Ultimately, reflection improves care by providing new ideas and creating solutions to patient-care enigmas (Kertis, 2007). Instructor feedback and self-reflection increase student's knowledge and encourage seeking learning opportunities.

The Importance of the One-Minute Preceptor. In the traditional method of clinical education, doctors rounded on patients in hospital wards where those patients were housed for days. As physicians passed from patient to patient, students were lectured about disease states and differential diagnosis (Aagaard et al., 2004). Precepting is a pivotal change from the traditional model of educating health-care providers. In today's fast-paced operating rooms, time for formal teaching is limited. Precepting has become a principal teaching method and is used to convey information from clinicians to students (Bott et al., 2011). By actively involving the student with assessing and diagnosing patients rather than relying on the physician's preparation, precepting challenged the traditional method of "rounds" education and placed the student squarely in the center of learning (Aagaard et al., 2004).

The OMP was initially applied to the field of medicine in 1992 (Neher & Stevens, 2003), but quickly spread as an important teaching tool to numerous other health-care specialties (Ignoffo et al., 2017). It is significant that the OMP is one of the first teaching strategies to create a preceptor-student health-care team (Bott et al., 2011). In that team model, the clinician guides the student through the daily work routines (Kertis, 2007). Student case preparation helps relieve

some of the teaching pressure (Gallagher, Tweed, Hanna, H., & Hoare, 2012), while

paradoxically, the OMP increases the number of preceptor-student contacts (Bott et al., 2011).

By utilizing the OMP, learning can be case specific (Gallagher et al., 2012) and can cover any

topic (Leinster, 2009). Questions are generated in real-time, making learning active (Gallagher et

al., 2012) and making results immediately applicable for the student and the patient (Kertis,

2007). In addition to providing the clinician a teaching platform, the OMP is useful for helping

clinicians evaluate student performance (Kertis, 2007) and better understand each student's

competency level (Aagaard et al., 2004).

   The OMP was designed for adult learners, who seek out and learn best through active

learning (Gallagher et al., 2012). By forcing students to perform more of the background-work

necessary to prepare for cases, the OMP engages the students and improves their learning

environment (Gallagher et al., 2012). Additionally, the OMP generates higher-order critical-

thinking and enhances retention through active learning strategies (Weitzel et al., 2012). When

students perform more of the work in producing a patient diagnosis (Gallagher et al., 2012),

preceptors are better able to assess the student's knowledge level (Aagaard et al., 2004).

According to Teherani, et al. (2007), students preferred the OMP over the traditional lecture

method, and especially appreciated the instant feedback from preceptors. Preceptors expressed

increased confidence in their ability to evaluate students using the OMP versus the traditional

teaching method (Teherani, O'Sullivan, Aagaard, Morrison, & Irby, 2007).

   Analysis of the One-Minute Preceptor. Researchers have reported favorable results for

the OMP. Compared to the traditional method of teaching, the OMP was found to be more

effective (Aagaard et al., 2004), more efficient (Swartz, 2016), and easier to implement (Neher &

Stevens, 2003). The OMP benefits everyone with brevity, allowing the clinician to quickly

assess the student's body of knowledge (Salerns et al., 2002) and rapidly fill in any knowledge

gaps (Neher & Stevens, 2003). The multi-disciplinary approach of the OMP improves reaching a

diagnosis over the traditional education model (Parrott et al., 2006) and provides an increased

quantity and quality of feedback to the student (Parrott et al., 2006). Use of the OMP improves

the learning experience by enhancing teaching actions (Neher & Stevens, 2003), and One-minute

preceptors are better at prompting students (Parrott et al., 2006) and yet avoid over-teaching

(Neher & Stevens, 2003). Additionally, real-time questioning and immediate feedback motivate

students to read extra material and come to clinical prepared for interactive discussions (Furney

et al., 2001).

Parrott's follow up to Furney's research identified that 90 % of the instructors still used a

majority of the material four years after learning the OMP skill-set (Furney et al., 2001; Parrott et

al., 2006). The OMP has been compared favorably with the S-O-A-P method of presenting

information. S-O-A-P is the acronym for subjective-objective-assessment-plan and is useful in

clinical settings to transfer information related to patient care (Ignoffo et al., 2017). An added

benefit of the OMP recorded by Kertis (2007) is that because of open dialogue, both the students

and the preceptors learned more about the patient and the patient's diagnosis.

Criticism of the One-Minute Preceptor. Not every researcher believes the OMP is the

best teaching tool available. According to Parrott et al. (2006), the OMP does not control the

quality of data that students gather, and is too simplistic if it is the only teaching tool used.

Ignoffo et at. (2017) stated if the OMP is applied too early in the education process, a deficit in

the novice's understanding can be hidden. Numerous criticisms of the model exist according to

Bott et al. (2011). First, teaching is limited, and no more than three basic rules should be taught

in one teaching encounter. Second, one minute is an insufficient amount of time to perform all of

the required steps in the OMP. Bott and colleagues suggested changing the name to the Five-

Minute Preceptor. Third, all new teaching methodologies should be grounded in pedagogy, and

the OMP is not (Bott et al., 2011). The investigators included that without prior research and

verification, outcomes related to different variables cannot be correctly assessed, and tool

validation before implementation helps explain variant outcomes (Bott et al., 2011).

Outcomes issues must be considered when deciding to use a teaching method and the

OMP is no exception. Eckstrom (2006) measured the effectiveness of teachers from 6-18 months

before receiving OMP instruction to 6-18 months post instructor education. The study showed no

benefit and the researcher reported no statistically significant difference in teaching quality from

pre-implementation to post implementation of the OMP. Bott et al. (2011) expressed concern

that new teaching models should be trialed before use as research allows the validity of the tool

to be established.

Limitation of the One-Minute Preceptor. Of the research articles reviewed on the

OMP, only one was a RCT. Most of the articles discussed using the OMP in a single setting,

many used self-reported data (Parrott et al., 2006), and few did any follow-up. The cohort sizes

were limited due to research settings and convenience sampling, and there were no documented

tests of validity or reliability of the OMP. Though the OMP is used in graduate education, no

studies to-date explicitly researched the OMP's applicability to the graduate student. Further

research is warranted on the validity and reliability of the OMP and its applicability to the

graduate level student.

One-Minute Preceptor Summary. In the 1990s, the education system was introduced to

a revolutionary teaching model called the One-Minute Preceptor (Neher & Stevens, 2003).

Education was evolving from the traditional lecture format to ward rounds, and finally to

student-centered learning (Leinster, 2009). The OMP was innovative; it was the first educational

tool based on a preceptor-student relationship (Neher & Stevens, 2003), and used a five-step

platform to initiate patient-care. Preceptors and students communicated and collaborated, and

patient-care benefitted from the OMP. Clinicians appreciated that the workload was minimized

(Gallagher et al., 2012) and that students took an active role in education. Students benefited

from hands-on learning (Gallagher et al., 2012; Teherani et al., 2007), instant feedback, and the

close preceptor-student relationship. Yet, research was poorly controlled, cohort sizes were

limited, and there is limited data on the validity of the OMP in a graduate setting.

The Dreyfus Five-Stage Skills Acquisition Model

Introduced in 1980, the Dreyfus Five-Stage Model of Skills Acquisition (Dreyfus, 1980)

has become a mainstay evaluation tool for clinical competence in the health-care fields. The

SAM been proven effective in clinical and didactic education (Ramsburg, 2012), and has been

introduced to dentistry (Lyon, 2014), financial planning (Chaffin & Cummings, 2012), and

library science (Hall-Ellis & Grealy, 2013). The NAP presented the SAM as an evaluation tool

for SRNAs in the clinical portion of the program. The central concept underpinning the use of

the SAM is that student competency will traverse through five stages as skills progress from

novice to expert.

Search Strategy for the Skills Acquisition Model. Since the Nurse Anesthesia Program

used Dreyfus' SAM to produce an evaluation form, a literature search using the CINAHL

Complete, MEDLINE, Psych INFO, ERIC, and Health Resource databases was initiated to

research the usefulness and validity of the SAM. The term *Skills Acquisition Model* was entered

into the search category for all text and title. The initial search returned 1,903 articles. Abstracts

and titles were searched to determine if the Dreyfus Model of Skills Acquisition was included in

the article and applicable to this DNP project. Subsequently, *Skills Acquisition Model* and the

term *anesthesia* were entered into the search for all text and title. Zero articles met those criteria.

A title and abstract review of the 1,903 articles was performed to determine the

applicability of the literature as reference material. Nine articles contained information about the

SAM and applied to this DNP. A Google search was also performed for the Dreyfus Five-Stage

Skills Acquisition Model, and one additional article was retrieved. An ancestry search collected

one article, bringing the total to 11. The 11 articles were evaluated using The Johns Hopkins

Hospital/The Johns Hopkins University Evidence Level and Quality Guide© (2017) (used with

permission). No level I RCTs were available. Two level II systematic reviews, six level III non-

experimental articles, one level IV professional opinion, and two level V literature reviews were

included in the research results. All articles were of quality A or B. Qualities A and B conform to

the same criteria used in the Johns Hopkins literature review of the OMP.

The Skills Acquisition Model. The Dreyfus Five-Stage Model of Skills Acquisition, also

called the Skills Acquisition Model (SAM), was first described by Steven and Hubert Dreyfus

(Dreyfus & Dreyfus, 1980). The SAM was initially designed to evaluate the skills necessary for

advanced learning activities such as playing chess, driving a car, and piloting an airplane

(Carlson, Crawford, & Contrades, 1989). The model was created by educators in response to

limitations in the ability to systematically evaluate intelligence, identify pattern recognition,

intuition, and personal reflection in skills development (Carraccio, Benson, Nixon, & Derstine,

2008). Since the SAM's inception, it has been retooled and used across multiple disciplines

(Hall-Ellis & Grealy, 2013; Lyon, 2014).

The SAM is a research-based evaluation tool that facilitates the learning process

(Carraccio et al., 2008). When assessing students, educators monitor preparation capabilities,

technical skills, and knowledge level or deficit. Instructors can also evaluate the validity of the

student's clinical experiences (Hall-Ellis & Grealy, 2013). Within the five-stage model, students

progress through increasingly complex competencies.

Though the diagram is designed with individual stages, the stages are not literally

accomplished in step by step manner, rather they are soft transitions that flow from one stage to

the next (Carraccio et al., 2008). As each stage of the SAM is attained, the learner has progressed

through lower levels to reach higher levels of competence (Ahlstrom, 2014). As learning

develops, the student's mental concepts mature from a novice's point of no prior knowledge or

experience to a level exhibiting the knowledge and ability of an expert (Chaffin & Cummings,

2012; Dreyfus, 2004). A learner who has reached the level of expert has advanced beyond the

confines of school is no longer a student according to the NAP evaluation form. (See Appendix

G to view the Dreyfus Five-Stage Skills Acquisition Model).

Skills Acquisition Model level: novice. Stage 1: For this NAP's purposes, the novice in

Dreyfus' SAM is a student with no prior clinical anesthesia experience (Brenner, 2004;

Ramsburg & Childress, 2012). In the initial weeks of the clinical phase, Stage 1 students

memorize facts without necessarily understanding context; in essence, following predetermined

rules (Chaffin & Cummings, 2012). Due to inexperience, students lack the benefit of prior

situational knowledge or previous skills sets with which to address clinical scenarios (Dreyfus,

2004). Novices are single-focused, lack overall vision (Lyon, 2014), and have difficulty seeing

the big picture (Carraccio et al., 2008). The consequences of memorized rules and minimal

experience are interventions that are textbook in character and inflexible in execution (Carlson et

al., 1989). Finally, expected outcomes are unknowable to the novice. Conclusions must be

retrieved from texts or explained by clinical experts for the student to recognize what outcomes should be expected (Lyon, 2014).

Skills Acquisition Model level: advanced-beginner. Stage 2: An advanced-beginner is a novice student who has gained a small amount of experience after repeated clinical exposure (Dreyfus, 2004; Ramsburg & Childress, 2012). With experience, the advanced-beginner begins to tie similar events and cases together and starts to view new experiences through a lens of context (Lyon, 2014). Practical experience is an effective teacher allowing the advanced-beginner to formulate principles for guidance. During this stage, input from instructors remains important (Lyon, 2014) as students gain knowledge from more accomplished practitioners (Brenner, 2004).

Learning by experience, advanced-beginners begin to recognize familiar settings; while still lacking discernment of details or the capacity to understand the whole scenario (Chaffin & Cummings, 2012). As sets of rules accumulate, application of those rules helps define patient-care outcomes (Ahlstrom, 2014). Advanced-beginners learn to determine clinical relevance based not only on rules but experience (Carraccio et al., 2008). Advanced-beginners are no longer novices and no longer single focused. Recurring experiences help generate knowledge and therefore produce a capable performance (Carlson et al., 1989).

Skills Acquisition Model level: competent. Stage 3: With competence comes a fuller application of knowledge and skills. That knowledge, according to Brenner (2004), is based on experiential learning. Having passed through the advanced-beginner stage, the student displays the ability to integrate new information and decipher increasingly complex problems (Ahlstrom, 2014). Competence creates the capacity to discern between important and unimportant tasks and data and allows students to see the big picture (Carraccio et al., 2008). Competent practitioners

understand how actions affect patient-care delivery and patient outcomes (Ramsburg &

Childress, 2012). The competent student continues to blend situational experience and context-

free information into problem-solving. Problem-solving moves from methodical to analytical

(Carraccio et al., 2008), and students are invested more in the patient and less in the process of

patient-care (Lyon, 2014). Competent student's actions are deliberate and display levels of

priority (Carlson et al., 1989), providing a sense of responsibility to the patient (Chaffin &

Cummings, 2012).

  Skills Acquisition Model level: proficient. Stage 4: Proficiency is marked by mature

thought processes that, according to Ahlstrom (2014), move from analytical to intuitive and,

according to Brenner (2004), move from quantitative to qualitative. The increased experience of

the proficient student creates pattern recognition, guiding the student's actions and making

problem-solving less ambiguous (Carraccio et al., 2008). The proficient student still follows

maxims and formulas to resolve critical situations and cannot make complex decisions

automatically (Carlson et al., 1989), but they quickly integrate new experiences with past

scenarios to achieve successful outcomes. Because of the ability to see patient-care holistically,

these providers can anticipate patient needs and deliver high-quality care (Chaffin & Cummings,

2012).

  Skills Acquisition Model level: expert. Stage 5: Experts have advanced through all the

stages of the SAM and can immediately assess and respond to patient needs (Ahlstrom, 2014).

Being reactive and intuitive rather than calculated in decision-making (Chaffin & Cummings,

2012, Lyon, 2014; Ramsburg & Childress, 2012), experts assimilate experiences with the

appropriate actions. Due to a vast array of experience, experts work fluidly and efficiently (Lyon,

2014), seeing what needs to be done and how best to accomplish the goal (Dreyfus, 2004). This

NAP does not use the expert label in the evaluation tool. Expert is a designation that is beyond

the reach of an anesthesia student while said student remains under constant supervision.

      Skills Acquisition Model level: master. The original article produced by Dreyfus (1980),

described the level of master. Mastery is accomplished only by an expert, exceeding the need for

principles and conscious thought; mastery harnesses mental energy to produce almost instant

solutions. That descriptor was later eliminated from Dreyfus' articles on skills acquisition. This

NAP's evaluation form does not include a column for master.

      Skills Acquisition Model level: unready. Preparation in a field of learning, such as chess

is not a life or death consequence as it is in anesthesia. Therefore, an additional category was

added for patient safety. A student who is ill-prepared or unable to perform the skill or

competency may be described as unready. Unready was not a stage in the original SAM and is

not a stage in the evaluation form. Unready is a description added by the NAP that may be used

at any stage to describe a student who is unready to perform in clinical.

      Benefits of the Skills Acquisition Model. The SAM is useful as an evaluation tool to

support the learning process (Carraccio et al., 2008). Preceptors use the SAM to review the

actions performed in real-time by students, determining whether each student's answers equate

with the performance of a novice, advanced-beginner, competent, or proficient provider

(Brenner, 2004). The SAM captures a student's reasoning as it evolves from memorization to

situational awareness (Carlson et al., 1989), from methodological to analytical, and from

quantitative to qualitative (Carraccio et al., 2008).

      Students develop knowledge and competence, facilitating growth to the succeeding stage

of the SAM (Brenner, 2004; Carlson et al., 1989; Carraccio et al., 2008). As a result of increased

competence, student's responsibilities develop and evolve (Brenner, 2004), and the amount of

staff involvement necessary for training may decrease. Competence and maturity bring an

increased commitment to education and a patient's wellbeing, resulting in the more advanced

students seeing the big picture. With competence comes the ability to tackle the cultural and

societal relevance of illness and disease (Carraccio et al., 2008).

The Dreyfus SAM was the first appraisal tool where the knowledge and skills evaluation

occurred during real-life scenarios (Brenner, 2004). With preceptor oversight, students

considered what was learned in didactic education and assimilated that with the knowledge

absorbed during patient-care interactions. Clinicians gave students goal-directed actions that

helped them progress towards predetermined objectives (Hall-Ellis & Grealy, 2013). Students

integrated understanding with real-time experience and applied that understanding to patient

care.

The SAM remains relevant because student evaluations are based on the competence and

performance of the learner, not the difficulty of the skill being performed. Regardless of the

action completed, training can proceed at the student's level of competence (Ahlstrom, 2014);

novice students are treated as novices, and are not expected to perform at a higher level of

competency The SAM will remain relevant in the foreseeable future because the evaluation

capacity and the ability to document competencies make the SAM useful in mentoring, coaching,

and professional development (Hall-Ellis & Grealy, 2013).

Criticism of the Skills Acquisition Model. One major shortcoming of the Dreyfus

model was the lack of a definition of terms in the original work. When terms are not defined in

research it is difficult to compare outcomes from evaluator to evaluator or to compare

evaluations across tools (Carraccio, Benson, Nixon, & Derstine, 2008). Pena (2010) interjected

that the Dreyfus model does not have operational definitions of the terms *explicitly, expertise,*

and *intuition.* Additionally, he stated that the Dreyfus definition of intuition and the use thereof

do not conform to the modern scientific understanding of the word (Pena, 2010). Not only did

Pena take exception to Dreyfus' lack of defined terms, but he also qualified there are numerous

types of knowledge not addressed in the Dreyfus model. Pena argued that the Dreyfus model did

not sufficiently explain the experience of daily learning, nor did the SAM include social structure

in learning or social knowledge (Pena, 2010).

The Dreyfus (2004) SAM describes skills performed by an expert to be intuitive and an

expression of implicit knowledge. Pena (2010, p.5) stated that explicit knowledge is described as

"knowing that" and it is expressible in language form. The knowledge that is "knowing how" is

implicit and according to Dreyfus cannot be explained. Pena (2010) contended that if implicit

knowledge is not expressible, it cannot be evaluated, and cannot be used as evidence for gaining

knowledge. Therefore, knowing is rooted in tacit, explicit, or expressible knowledge; the idea

that the Dreyfus model defined skills at the expert level as entirely implicit is a physical

impossibility.

Pena (2010) expressed unease that Dreyfus' model was philosophical in origin, not

scientific (neurologic), and therefore difficult to analyze and/or reproduce through

experimentation (p.1). The Dreyfus model was built on Edmund Husserl's phenomenological

study of personal experience (Pena, 2010). Due to the SAM's design and lack of term

definitions, Pena (2010) expressed that the Dreyfus model is too simplistic and that the

assumptions made about the acquisition of learning are not scientifically based. He alleged that

the Dreyfus model might help explain the acquisition of some skills, but certainly not all skills,

and probably not clinical skills. Hall-Ellis et al. (2013) disagreed with that point, stating that

outcomes of clinician's experience can be described and that clinical knowledge can be captured.

Carraccio et al. (2008) stated that the SAM might not be sufficient by itself and it should be used

with other evaluation tools to get a fuller picture of the student's competency level. This author

believes that the Dreyfus model is not designed to explain every process of learning, however, in

accord with the suggestion by Carraccio et al., the SAM is not used exclusively in student

evaluations at this NAP. NAP's use multiple formats when creating formative and summative

evaluations. The SAM delineates advancement in skill acquisition and is practical as an

evaluation tool to record actions and evaluate competence against a set standard, or terminal

objective.

Analysis of the Skills Acquisition Model. The SAM is a scaffold evaluation system

where preceptors evaluate the skills of the students being instructed. Regardless of the discipline,

the student passes from novice to advanced-beginner, competent, and finally proficient

(Ahlstrom, 2014). The goal of the SAM is that every student reaches a point of independence

(Ahlstrom, 2014) and performs without the assistance of a preceptor. Because the SAM

evaluates step-wise growth, every learner should be mentored by someone at a higher level than

where the student currently stands (Carraccio et al., 2008). According to Hall-Ellis & Grealy

(2013), students whose skills have been assessed with the Dreyfus SAM come out of school

competent and ready to perform.

Limitations of the Skills Acquisition Model. Due to a lack of definable terms and

minimal rigorous testing, the SAM's reliability and validity have come under scrutiny. In

addition to omitting key terms in his original work (Carraccio et al., 2008), the premise for the

SAM was based on Husserl's phenomenology study of personal experience and not on

reproducible scientific principles (Pena, 2010). The SAM has not been tested in a RCT study.

The validity of the tool would be significantly enhanced by rigorous testing and standardization

of terms.

   Summary of the Literature Review. The One-Minute Preceptor is an innovative

teaching tool that has helped learning to evolve from the lecture hall to the patient's bedside.

Through a five-step series, a preceptor can help students learn didactic lessons and clinical skills,

while simultaneously directing patient-care. Through fostering a preceptor-student relationship,

the OMP generates open dialogue and encourages student participation and has been added to the

Preceptor Toolkit with the intention of opening communication lines and eliminating the barriers

to performing student evaluations.

   The Dreyfus Five-Stage Model of Adult Skills Acquisition (SAM) was introduced in

1980 to describe five developmental stages in learning used to demonstrate that a student had

progressed from abstract principles to concrete experiences (Dreyfus & Dreyfus, 1980). As

learners advanced, they progressed through stages beginning at the novice stage, someone having

no knowledge or experience, onto advanced-beginner, to the competent stage, through the

proficient stage, and finally emerging as an expert (Dreyfus, 2004). This NAP and the TCH

jointly use a form of the SAM as a formative evaluation tool to help in the process of educating

SRNAs. As such, a SAM evaluation form and an explanation of how to efficiently use the SAM

have been added to the Preceptor Toolkit.

   Project Implementation

   To successfully implement the DNP project, it was important to understand the

communication and evaluation concerns of the NAP and the TCH. An initial survey was sent to

CRNA preceptors to clarify their opinions of precepting and to understand their concerns about

evaluating students. A PICO literature-review question was drafted that centered on preceptor's

concerns. The results of the literature review, conducted to answer the PICO question, informed

the development of the Preceptor Toolkit.

The survey findings and the Preceptor Toolkit, containing the OMP and the SAM were

presented in an educational forum to the CRNA preceptors at the TCH. Approximately 50

CRNAs and SRNAs were in attendance. The presentation was delivered in person from a

PowerPoint format. Each tool was dissected, and the instrument's various functions explained.

Mock scenarios were created to increase staff's understanding as real-life patient-care examples

were described. Also, implementation strategies were outlined, and advantages of using the

toolkit for precepting anesthesia students were discussed.

The TCH requested a voice-over PowerPoint titled, "Implementing a Preceptor Toolkit

and Eliminating the Barriers to Student Evaluations" to be used in the education department. The

module was be uploaded into the hospital's intranet system and used for yearly continuing

education purposes. Each CRNA will be required to complete a quiz after viewing the

presentation to receive full education credit.

Post-Implementation Survey

Following the toolkit presentation to the nurse anesthetists at the TCH, a second

anonymous online survey was disseminated to the preceptors. All protocol related to institutional

review and anonymity that applied to the first survey were applied to the second survey

(Dillman, 2007). The survey was sent via the intranet to all 55 CRNAs. Respondents had to click

the agree box that stated they received and understood they were granting informed consent

before SurveyMonkey would allow the survey to open. Initially, three weeks were allotted to

complete the survey. After three weeks a follow-up reminder and thank you with a link to the

survey were sent to all staff. The survey remained open five weeks until no new surveys

returned.

The final, or post-implementation survey contained the original questions in original

format. The staff could answer every question or skip questions at random. The goal of the

questions was to determine if there was a change in CRNA's opinions about precepting and

evaluating students from pre- to post-implementation of the Preceptor Toolkit. Two additional

questions were added to the second survey; both were used to determine if the respondent knew

of and had used the Preceptor Toolkit. Responses were anonymous. Any responses to the second

survey showing no use or knowledge of the Preceptor Toolkit caused the survey to be eliminated

from the analysis. Without knowledge of the toolkit, there can be no difference in opinion

attributed to the teaching modules. The TCH's nurse educators used SurveyMonkey to distribute

the survey. Replies to the DNP survey were recorded anonymously by SurveyMonkey, and at no

time did any person have access to personal identification or unique identifiers. Data, void of

descriptors, were accumulated and analyzed.

Description of the Sample

The pre-implementation survey was distributed to 55 CRNAs at a conveniently-selected

TCH. Thirteen (23%) CRNAs completed the initial survey. Three weeks after the presentation of

the Preceptor Toolkit, a post-implementation survey was sent to all 55 CRNA preceptors. Of the

11 CRNAs who responded to the survey, 9 CRNAs (16%) indicated they used the toolkit. Two

respondents did not indicate knowledge or use of the toolkit. Those two surveys were eliminated

from analysis. Males comprised a slightly higher percentage of respondents on both surveys. The

majority of respondents were masters prepared. The median age of CRNAs was between 41-50

years, and the median years of anesthesia experience was 11-15 years. (See Appendix H for a

description of participant characteristics).

Discussion

Results

The PICO question for this DNP project was, *For anesthesia preceptors, will the*

utilization of a resource toolkit minimize the barriers to completing student evaluations and

increase the percentage of evaluations performed? The null hypothesis for the first half of this

question was that the resource toolkit would not minimize barriers to student evaluations. Using

a comparison of median scores (see Appendix I) to determine changes in preceptor's opinions,

the null hypothesis was retained. The median comparisons were generated from the Likert

questions that elicited preceptors' opinions of precepting students. All the questions on the two

surveys were answered identically except one. Preceptors reported on the post-implementation

survey that they *agreed* it was easy to evaluate anesthesia students. On the initial survey, they

strongly agreed it was easy to evaluate anesthesia students. Including that difference in

preceptors' answers, when the surveys were analyzed there was no significant difference in

preceptor's opinions after receiving the instructions in the Preceptor Toolkit.

The null hypothesis for the second half of the PICO question was that the percentage of

completed responses would not increase. This portion of the question was not evaluated, no

comparison could be made. Due to the decision to make the surveys anonymous, there was no

way to determine if the same CRNAs who answered the first survey also answered the second

survey.

Descriptive comments and range questions were compared (see Appendix I for ranges).

The range questions pertained to participant's ages and experience, CRNAs ranged from 20 to 60

plus years old, and their years of experience ranged from zero to greater than 20 years. There

were small variations between the surveys. The descriptive content was generated in the first

survey by asking for improvement ideas for the student evaluation process. Individual short-

answer responses were organized and tabulated to determine the most frequent response (see

Appendix J for CRNA responses). The studies did not meet the assumptions for a T-test. No

verbal or open-ended questions were gathered with the post-implementation survey.

Strengths

The toolkit was crafted for a specific NAP and TCH, two specific facilities that worked in

collaboration, simultaneously educating anesthesia students. The survey questions were not

generic nor randomly generated, they were written for this DNP project. Nurse anesthetists at the

TCH were surveyed to identify self-perceived barriers to precepting and the results of the

questionnaire were tailored to those institutions' needs.

The OMP was chosen for the toolkit because, it increases learning by improving

preceptor-student communications (Aagaard et al., 2004). The teaching aid is student-oriented

and can be applied to almost any learning circumstance in the TCH. Additionally, the OMP is

easy to learn and easy to institute (Bott et al., 2011) and produces rapid results. The SAM was

chosen for the toolkit because the module's design was the framework for the existing student

evaluation forms, and preceptors requested help to understand how to complete the form

correctly. The SAM is a valuable evaluation tool due to its multiple-stage design, it allows

preceptors to evaluate students at every level of competence (Ahlstrom, 2014).

Limitations

The choice to use the OMP was based on the project designer's preference related to

prior exposure to the teaching tool. No literature review or research was performed prior to

choosing the tool to determine that the OMP was the best precepting resource available. Survey

size and design were both limitations. From the initial cohort of 55 participants, 13 CRNAs

completed the initial survey, and 11 completed the post-implementation survey. Determining

changes in CRNAs opinions about precepting, one of the DNP's main objectives, was prevented

due to anonymity. It was impossible to know if the staff who answered the first survey also

answered the second survey. The survey was not sufficiently sensitive to detect small

changes. A statistically significant difference might have been observed if the surveys had been

designed with a greater number of categories. The time-frame from the Preceptor Toolkit

implementation until SurveyMonkey opened for to data accumulation was a limitation.

SurveyMonkey opened for responses one day after the Preceptor Toolkit presentation. The

results from the first survey to the second survey might have been significant if the preceptors

had more opportunity to implement the OMP and the SAM before completing the follow-up

survey. Finally, because the DNP project was designed for a specific NAP-TCH combination,

the Preceptor Toolkit may not be applicable to other facilities.

Cost/Benefit

There were no out of pocket expenses for the DNP student related to this project.

Expenses were all associated with labor costs. The DNP student met with the hospital's Chief

CRNA four times to discuss the project and coordinate the survey and presentation details. Each

visit lasted approximately one hour; her time is valued at $100 per hour. The Chief CRNA

allowed the education nurses to format and deliver the surveys. Nursing's time was

approximately six hours at $30 per hour. The CRNAs completed the surveys and attended the

toolkit presentation on company time. Thirteen staff spent one hour at $70 per hour answering

both surveys and attending the Preceptor Toolkit seminar. Two additional staff answered one

survey and attended the presentation. Two staff expended 0.66 hours at $70 per hour.

Approximately 40 staff attended the presentation but did not complete the surveys. The

presentation time allowed was 20 minutes. Therefore, 40 staff attended 0.33 hours at $70 per

hour. The hospital spent approximately $2,366 on staff wages to allow this DNP project to be

presented. Wages are approximations based on the number of participants and average wage.

The Chief CRNA expressed that the benefit afforded the staff from ongoing preceptorship

education was worth the cost of performing those functions.

Social Justice Implications

Nurse Anesthetists provide urgent and emergency anesthesia care to people around the

world and many of those CRNAs also train students to perform anesthesia. Though it is a scope

of practice issue that all students be evaluated (COA, 2017) by their preceptors, there is no

standardization in the evaluation process or in the evaluation forms used. Student evaluations

vary from institution to institution and from preceptor to preceptor. Student evaluation

standardization is an important issue that must be addressed if the real intent behind the COA's

(2017) mandates of formative and summative evaluations are to be fairly implemented.

Contributions to practice knowledge

The contribution to clinical practice is directly correlated to the relationship between the

NAP and the TCH. The Preceptor Toolkit was designed to explain to the CRNA preceptors how

to use the NAP's student evaluation form, and hopefully eliminate the preceptor's barriers to

performing student evaluations. The OMP was chosen as a teaching tool to improve the

preceptor's communications with the NAP's students. In addition to preceptor training for the

TCH's staff, the student's clinical education benefitted from enhanced communication with

preceptors and from their preceptor's improved ability to evaluate their skills competency.

Significance for collaboration

The DNP project increased communication and improved the collaboration between the NAP's faculty and TCH staff. Additionally, this project provided the DNP student the opportunity to collaborate with shareholders at the TCH's Nurse Research Board, IRB committee, and the IRB committee from St. Catherine University. Throughout the project, there were meetings with the Chief CRNA, the education nurses, and many of the TCH's CRNAs. I also collaborated with the instructors and advisors from St. Catherine and worked closely with my site mentor and advisor.

Suggestions for Future Study

Communication between staff and students remains a difficult and controversial topic in clinical education. Staff often feel unprepared and unappreciated for the work performed with students (Seldomridge, 2006). The OMP enhances communication (Gallagher et al., 2012), but the tool itself has not been exhaustively researched for validity (Bott et al., 2011) or applicability to the graduate level student. Future study should be performed to determine the validity and reliability of the OMP and its applicability to graduate level students.

The SAM was included in the toolkit produced for this DNP project because it was used in the creation of the NAP's student evaluation form. Due to the lack of defined terms in the original SAM, future study should be directed towards the SAM's validity. Studies in future projects may help determine if the SAM is the best model available for creating a clinical evaluation tool.

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Conclusions

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The nurse anesthetists who precept students are clinician-volunteers who lack teaching credentials or evaluation methodology. Preceptors at the local hospital voiced concerns to the

Nurse Anesthesia Program regarding ineffective communications with students and difficulties they encountered assessing the students they were precepting. To help resolve those preceptor-student concerns, a communication tool, the One-Minute Preceptor, and an evaluation tool, the Dreyfus Five-Stage Model of Adult Skills Acquisition were selected, and a Preceptor Toolkit was created. After the toolkit was delivered to the hospital's staff, a follow-up survey was used to determine if there were any changes in the preceptor's opinions about precepting and performing student evaluations. When the answers from the post-implementation survey were compared to the initial survey, there were no significant differences recorded in the CRNA's opinions about precepting and evaluating students. Future research should be directed toward the validity and reliability of teaching tools such as the One-Minute Preceptor and the Dreyfus Five-Stage Model of Adult Skills Acquisition. Finally, this quality improvement project was designed for a specific NAP and TCH; research should be performed to determine the applicability of this Preceptor Toolkit to other anesthesia programs and hospitals.

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      0328943942

Appendix A

Mount Marty College-Nurse Anesthesia Program
Daily Clinical Evaluation Report

Student_____ Date_____Semester 1 2 3 4 5

U=Unready	N-Novice	A-Advance Beginner	C-Competent	P-Proficient
Unsafe in many areas. Requires constant cues or verbal support. Lacks ability to demonstrate skill or knowledge in critical areas. Not at skill level expected for amount of clinical experience. *Requires comment on specific learning needs for student.	Constant supervision needed. Psychomotor and didactic knowledge evident. Focuses on skills and procedures. Needs frequent supportive cues. Weak rationale for decisions.	Close supervision needed. Fragmented skill seen, but development is observable. Developing efficiency and coordination. May need cues for prioritization or decision-making. Sound rationale evident in basic cases.	Some supervision needed. Consistent application of knowledge and skill. Anticipates needs. Occasional supportive cues, especially in complex cases. Developed efficiency, coordination, and confidence. Usually uses sound rationale.	Occasional supervision needed. Consistent application of knowledge and skill. Rarely needs supportive cues, even in complex cases. Efficient, coordinated, confident. Consistently uses sound rationale.

Prepared and presented appropriate plan of care for patient				Yes	No	
CRITERION (Numbers indicate the semester expectation)	**N**	**A**	**C**	**P**	**NA**	**U**
Sets up room: selects and checks agents and equipment appropriately	1	2	3	4, 5		*
Conducts a thorough preoperative assessment and interview	1	2	3	4, 5		*
Formulates an appropriate, culturally competent plan of care	1	2	3	4, 5		*
Applies pharmacodynamic/pharmacokinetic principles	1	2	3	4, 5		*
Titrates medications appropriately	1	2	3	4,5		*
Safely positions patients to prevent injury	1	2	3	4, 5		*
Discusses implications of procedure and anesthetic technique	1	2	3	4, 5		*
Utilizes evidence to guide decision-making	1	2	3	4, 5		*
Manages airway and ventilation effectively	1	2	3	4, 5		*
Interprets monitoring data appropriately	1	2	3	4,5		*
Effectively manages physiologic changes	1	2	3	4, 5		*
Manages fluid/blood replacement needs in accordance with procedure/pathophysiologic state	1	2	3	4, 5		*
Utilizes patient condition and procedure needs to manage safe and effective emergence	1	2	3	4, 5		*
Documents care in a legible, timely, accurate, and complete manner	1	2	2	3- 5		*
Maintains appropriate vigilance throughout	1	2	2	3- 5		*
Logically organizes work area to efficiently and safely care for patients	1	2	2	3- 5		*
Consistently utilizes infection control/universal precautions				1-5		*
Demonstrates professional responsibility in all interactions with health care team				1-5		*
Utilizes collaboration and teamwork to effectively manage patient care.	1	2	3	4, 5		*
Effectively manages stressful situations	1	2	3	4, 5		*

Comments:
The student performed well in:

The student needs to develop skill/knowledge in:

Student Signature_____ Preceptor
Signature_____

Appendix B

Initial Survey

Scott Holzemer DNP Project; Initial CRNA Survey
Your completion of this survey signifies your informed consent

Please put an [X] in the space provided that best represents your feelings about the question asked.

   Strongly agree   (SA)
   Agree   (A)
   Neutral   (N)
   Disagree   (D)
   Strongly disagree   (SD)

   SA [ ]   A [ ]   N [ ]   D [ ]   SD [ ]

- I precept nurse anesthesia students once a week. . . . .
  [ ]   [ ]   [ ]   [ ]   [ ]
- I have sufficient time to perform a proper student evaluation.
  [ ]   [ ]   [ ]   [ ]   [ ]
- The daily clinical student evaluation forms are easy to fill out. . . . .
  [ ]   [ ]   [ ]   [ ]   [ ]
- Anesthesia student's responsibilities are easy to identify . . . . .
  [ ]   [ ]   [ ]   [ ]   [ ]
- Anesthesia students are easy to evaluate . . . .
  [ ]   [ ]   [ ]   [ ]   [ ]
- Anesthesia students are easy to communicate with . . . .
  [ ]   [ ]   [ ]   [ ]   [ ]
- I am comfortable evaluating anesthesia students. . . . .
  [ ]   [ ]   [ ]   [ ]   [ ]
- I am not qualified to evaluate anesthesia student's clinical performance. . . . . . .
  [ ]   [ ]   [ ]   [ ]   [ ]
- I have good support from my hospital about performing anesthesia student evaluations.
  [ ]   [ ]   [ ]   [ ]   [ ]
- I have good support from Mount Marty College about performing anesthesia student evaluations.
  [ ]   [ ]   [ ]   [ ]   [ ]
- I have good communication with Mount Marty College faculty . . . .
  [ ]   [ ]   [ ]   [ ]   [ ]

- How many years have you been a CRNA   0-5yr   [ ]
  6-10yr [ ]
  11-15yr [ ]
  16-20yr [ ]
  21+ yrs [ ]

- I am   Male [ ]
  Female [ ]

- I am   20-30 yr old [ ]
  31-40 yr old   [ ]
  41- 50 yr old [ ]
  51- 60 yr old [ ]
  61+ yr old   [ ]

- Education level: Certificate [ ]
  BS   [ ]
  MS   [ ]
  PhD   [ ]
  DNP/DNAP [ ]

  Please consider your experience evaluating SRNAs in a clinical/OR setting. Is there anything that you would like to suggest to improve Mount Marty's student clinical evaluation process?

Type your comments here:

  Thank you for taking your valuable time to complete this survey.

Appendix C

Informed Consent

ST CATHERINE UNIVERSITY

Informed Consent for a Research Study
Study Title: Implementing a Toolkit and Eliminating the Barriers to Student Evaluations
Researcher(s): Scott Holzemer MS, CRNA
You are being invited to participate in a research study. This study is called, "Implementing a Toolkit and Eliminating the Barriers to Student Evaluations." The study is being done by Scott Holzemer MS, CRNA. Mr. Holzemer is a CRNA at McKennan's ASC and a doctoral student at St. Catherine University in St. Paul, MN. The faculty advisor for this study is Katrice Ziefle PhD. at St. Catherine University.
The purpose of this study is to determine the barriers CRNAs have to evaluating SRNAs and research an evidence-based solution to those barriers. After the implementation of an evidence-based Toolkit, I will survey CRNAs a second time to determine if the barriers have been eliminated. This study is important because it will increase CRNAs ability to evaluate students, and it will improve SRNAs education. Approximately 50 CRNAs are expected to participate in this research. Below, you will find answers to the most commonly asked questions about participating in a research study. Please read this entire document and ask questions you have before you agree to be in the study.

Why have I been asked to be in this study?
CRNAs evaluate students in clinical settings daily. Every CRNA that works at Avera McKennan is being included in this survey.

If I decide to participate, what will I be asked to do?
If you meet the criteria and agree to be in this study, you will be asked to do these things:
- You will be asked to complete a short multiple choice and short answer survey. The survey will take about 10 minutes
- After the data from the survey is analyzed, a short description of the findings and evidence-based solutions to the barriers will be presented. That meeting will last approximately one hour.
- To complete this project, a second survey will be sent. The goal of the second survey is to determine if the barriers to student evaluations have been overcome. The second survey will take about 10 minutes to complete.

In total, this study will take approximately one hour and twenty minutes over three encounters, two by email, one in person.

What if I decide I don't want to be in this study?

Participation in this study is completely voluntary. If you decide you do not want to participate in this study, please feel free to say so, and do not sign this form. If you decide to participate in this study, but later change your mind and want to withdraw, simply notify me and you will be removed immediately. You may withdraw until we are no longer accepting survey results and

the survey closes. Your decision of whether or not to participate will have no negative or positive impact on your relationship with St. Catherine University, Mount Marty College, or Avera McKennan Hospital, nor with any of the students or faculty involved in the research.

What are the risks (dangers or harms) to me if I am in this study?

The risks involved with this research project are minimal. They include any consequences attributed to the loss of confidentiality (loss of confidentiality means someone finding out that you participated in this survey).

What are the benefits (good things) that may happen if I am in this study?

There are no physical or monetary benefits from completing this survey.
The potential benefits from completing this survey will be helping to eliminate the barriers CRNAs have to performing student evaluations. CRNAs may have increased job satisfaction. SRNAs may have an improved educational experience.

Will I receive any compensation for participating in this study?
No, there is no compensation for participating in this study, however the survey may be completed while you are at work.

What will you do with the information you get from me and how will you protect my privacy?
The information that you provide in this study will be stripped of any identifying marks, symbols, letters, or names while it is being compiled, before it is analyzed. I will keep the research results in an external drive, dedicated to the research project. Only I and my research advisor will have access to the records while I work on this project. I will finish analyzing the data by March 2018

Are there possible changes to the study once it gets started?
If during course of this research study I learn about new findings that might influence your willingness to continue participating in the study, I will inform you of these findings

Who is responsible for any injury caused by this research project?
The risk of injury related to this survey is minimal. Should any injury occur, it is the responsibility of the participant (you) and your health insurance carrier to resolve any claims. The Principal Investigator, St. Catherine University, nor Avera McKennan accept any responsibility to resolve any injury.

How can I get more information?
If you have any questions, you can ask them to Scott Holzemer before you sign this form. You can also feel free to contact me at scholzemer@stkate.edu or (605) 350.5347. If you have any additional questions later and would like to talk to the faculty advisor, please contact Katrice Ziefle PhD. at kziefle@stkate.edu. If you have other questions or concerns regarding the study and would like to talk to someone other than the researcher(s), you may also contact Dr. John Schmitt, Chair of the St. Catherine University Institutional Review Board, at (651) 690-7739 or jsschmitt@stkate.edu.

Finally, if you have questions regarding your rights as a research subject, you may contact the Avera Institutional Review Board (IRB) through the Department of Human Subjects Protection at (605) 322-4706. (An Institutional Review Board (IRB) is a committee established to review and approve research involving human subjects. The purpose of the IRB is to ensure that all human subject research be conducted in accordance with all federal, institutional, and ethical guidelines.)
•   You may also call this number, (605) 322-4706 to discuss or report any problems, complaints, or concerns you have about this research study.
•   You may also call this number, 605) 322-4706 if you cannot reach research staff, or you wish to talk with someone who is independent of the research team.

You may keep a copy of this form for your records.
Sincerely,
Scott Holzemer MS, CRNA

Statement of Consent: I consent to participate in the study
My signature indicates that I have read this information and my questions have been answered. I also know that even after signing this form, I may withdraw from the study by informing the researcher(s).

_____

Signature of Participant   Date

Appendix D

Pre-survey alert

Scott Holzemer CRNA
Assistant Professor of Anesthesia, Mount Marty College

Dear CRNA,
I am a graduate student working on a Doctor of Nursing Practice (DNP) project. In the next few days I will be sending you a survey by email. This survey and DNP project is related to the Mount Marty College's (MMC) process of evaluating Student Registered Nurse Anesthetists (SRNA).
We have found at MMC that some clinical evaluation forms are returned improperly completed. I hope to understand why. I believe we can provide a better education for our students if we utilize our evaluation process to its highest potential.
I hope you will take a couple of minutes to fill out my survey and return it. The results will be tabulated and the information utilized in the evaluation process. The surveys that follow will be anonymous. No one will know who participated.
Thank you in advance,
Scott

Appendix E

Post-survey follow-up and thank you

Dear CRNA,

Two weeks ago you received an invitation to complete a survey titled; "Implementing a Toolkit and Eliminating the Barriers to Student Evaluations." I want to thank you for your participation in this Doctor of Nursing Practice research project.

If you have not had an opportunity to complete the survey, would you please take a couple of minutes to complete it right now?

Thank you again, I am most grateful for your participation.

Sincerely,

Scott Holzemer MS, CRNA

Appendix F

Toolkit Post-Implementation Survey

Your completion of this survey signifies your informed consent

Please put an [X] in the space provided that best represents your feels about the question asked.

Strongly agree   (SA)
Agree   (A)
Neutral   (N)
Disagree   (D)
Strongly disagree   (SD)

SA [ ]   A [ ]   N [ ]   D [ ]   SD [ ]

- I use Ideas from the Preceptor Toolkit every time I evaluate anesthesia students.
  [ ]   [ ]   [ ]   [ ]   [ ]
- I am unaware of a Preceptor Toolkit.
  [ ]   [ ]   [ ]   [ ]   [ ]
- I precept nurse anesthesia students once a week.
  [ ]   [ ]   [ ]   [ ]   [ ]
- I have sufficient time to perform a proper student evaluation.
  [ ]   [ ]   [ ]   [ ]   [ ]
- The daily clinical student evaluation forms are easy to fill out.
  [ ]   [ ]   [ ]   [ ]   [ ]
- Anesthesia student's responsibilities are easy to identify.
  [ ]   [ ]   [ ]   [ ]   [ ]
- Anesthesia students are easy to evaluate.
  [ ]   [ ]   [ ]   [ ]   [ ]
- Anesthesia students are easy to communicate with.
  [ ]   [ ]   [ ]   [ ]   [ ]
- I am comfortable evaluating anesthesia students.
  [ ]   [ ]   [ ]   [ ]   [ ]
- I am not qualified to evaluate anesthesia student's clinical performance.
  [ ]   [ ]   [ ]   [ ]   [ ]
- I have good support from my hospital about performing anesthesia student evaluations.
  [ ]   [ ]   [ ]   [ ]   [ ]
- I have good support from Mount Marty College about performing anesthesia student evaluations.
- [ ]   [ ]   [ ]   [ ]   [ ]
- I have good communication with Mount Marty College faculty.
- [ ]   [ ]   [ ]   [ ]   [ ]

- How many years have you been a CRNA   0-5yr   [ ]
  6-10yr [ ]
  11-15yr [ ]
  16-20yr [ ]
  21+ yrs [ ]

  - I am   Male   [ ]
    Female [ ]

  - I am   20-30 yr old [ ]
    31-40 yr old [ ]
    41- 50 yr old [ ]
    51- 60 yr old [ ]
    61+ yr old   [ ]

  - Education level: Certificate [ ]
    BS   [ ]
    MS   [ ]
    PhD   [ ]
    DNP/DNAP [ ]

Thank you for taking your valuable time to complete this survey.

Appendix G

Dreyfus Five-Stage Skills Acquisition Model

| Level	Stage	Characteristics	How know-ledge etc is treated	Recognition of relevance	How context is assessed	Decision-making
1	Novice	Rigid adherence to taught rules or plans Little situational perception No discretionary judgement	Without reference to context	None	Analytically	Rational
2	Advanced beginner	Guidelines for action based on attributes or aspects (aspects are global characteristics of situations recognisable only after some prior experience) Situational perception still limited All attributes and aspects are treated separately and given equal importance	In context			
3	Competent	Coping with crowdedness Now sees actions at least partially in terms of longer-term goals Conscious, deliberate planning Standardised and routinised procedures		Present	Holistically	
4	Proficient	Sees situations holistically rather than in terms of aspects Sees what is most important in a situation Perceives deviations from the normal pattern Decision-making less laboured Uses maxims for guidance, whose meanings vary according to the situation				
5	Expert	No longer relies on rules, guidelines or maxims Intuitive grasp of situations based on deep tacit understanding Analytic approaches used only in novel situations or when problems occur Vision of what is possible				Intuitive

Adapted from: Dreyfus, S E (1981) Four Models v human situational understanding: inherent limitations of the modeling of business expertise USAF Office of Scientific Research, ref F49620-79-C-0063. Retrieved from Lester (2005). Novice to Expert: the Dreyfus model of skill acquisition. http://www.sid.demon.co.uk/dreyfus.pdf

Appendix H

Description of Participant Characteristics

Sample Characteristics		Pre-Implementation Survey (n, % of responses)	Post-Implementation Survey (n)
Surveys sent		55	55
Surveys returned		13 (23%)	11 (20%)
Gender Distribution			
	Male	7 (54%)	6 (55%)
	Female	6 (46%)	5 (45%)
Age Distribution			
	20-30	1 (8%)	0
	31-40	3 (23%)	2 (18%)
	41-50	7 (53%)	5 (45%)
	51-60	1 (8%)	4 (36%)
	No response	1 (8%)	0
Anesthesia Experience			
	0-5 years	2 (15%)	1 (9%)
	6-10 years	5 (38%)	3 (27%)
	11-15 years	2 (15%)	2 (18%)
	16-20 years	1(8%)	1 (9%)
	≥ 21 years	3 (23%)	4 (36%)
Anesthesia Education			
	Bachelor's	2 (15%)	3 (27%)
	Master's	11(85%)	7 (63%)
	Doctorate	0	1 (9%)

Appendix I
Pre-survey to Post-implementation survey Comparison
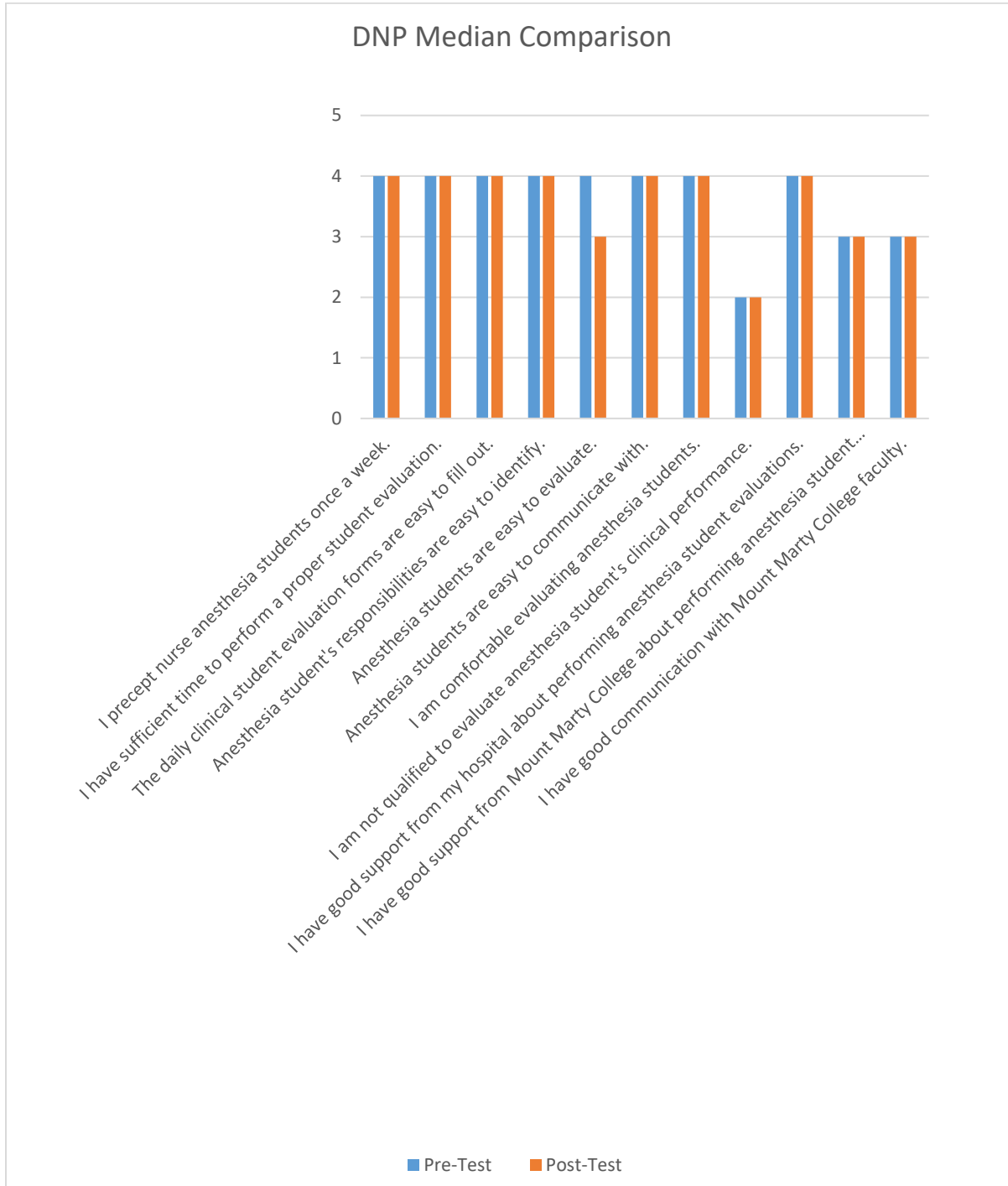
Created on Excel 02/2018; Compares pre-implementation to post-implementation survey results.
1: Strongly disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly agree

DNP project: Implementing a Preceptor Toolkit and Eliminating the Barriers to Student Evaluations

Appendix J

CRNA Responses

CRNA were asked to response to the following question. Responses in bulleted list.
Please consider your experience evaluating SRNAs in a clinical/OR setting. Is there anything
that you would like to suggest to improve Mount Marty's student clinical evaluation process?

- Exactly what are the expectation from faculty for evaluation? Semester 1,2…. Seems like the answer is not the same for everyone.
- If a student is having difficulty then please communicate that so we can really maximize teaching in the OR.
- Exactly what resources do you want CRNAs using as a guide. (i.e. Nurse Anesthesia, Morgan, Barash, Stoelting, etc.) While I can give references for teaching, it needs to be in line with what they are using as resources.
- There also needs to be better communication from students. Sometimes Care Plans come in the day after the case was performed.
- What are the expectations if a student is not prepared for the clinical day? Thank you for surveying the staff.
- Better clarification of the expectations to reflect their level of clinical experience (what staff should expect relative to their level of experience.
- Actual expectations for students at each level/semester would be helpful.
- Shorter form
- They should write down things they should improve on which is like a self-assessment and would further aid in CRNA-SRNA discussion and accountability of both CRNA and SRNA and bring about further education discussions.