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# Consistency in Clinical Preceptor Field Training for Sonography Students

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COLLEGE OF EDUCATION

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Cathy Daniels

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Abstract

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MEd, North Carolina State University

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Doctoral Study Submitted in Partial Fulfillment

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## Abstract

Consistency in clinical preceptor training for sonography students is important in assuring equity in sonography student evaluation. Review of a local community college sonography program revealed a gap between expected roles and responsibilities of clinical preceptorship and what was actually done in the clinical setting. The purpose of this project study was to explore perceptions of graduates and preceptors regarding what constituted best practices in the evaluation of sonography students in the clinical setting. Knowles's theory of active learning provided a framework for understanding the student-preceptor relationship in the evaluation process. Research questions focused on sonography graduates' and clinical preceptors' perceptions of important practices for ensuring consistency and equity in clinical evaluation. A case study design composed of face-to-face interviews with 5 graduates and 5 preceptors at the study community college was used to address the research questions. Sonography graduates were at least 2 years post-graduation; preceptors had at least 1 year with the program and at least 2 years of clinical experience. Interview data were transcribed verbatim and open coded to identify common themes. Four themes were identified: similar definitions of consistency in evaluation, importance of immediate feedback after skillls performance, potential favoritism in clinical evaluation, and the need to enforce program policies. Findings were used to design a clinical preceptor training workshop that could provide a better understanding of effective measures to attain consistency and equity in the evaluation process, fostering positive social change by helping prepare sonography students as competent practitioners to address health care needs locally and globally.

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Section 1: The Problem

## Introduction

A lack of uniformity in performance expectations appeared to directly affect equity among sonography students' clinical evaluations at a local 2-year community college. The program director indicated that student, faculty, and preceptor evaluations revealed that there was a gap in the interpretation of the roles and responsibilities of clinical preceptorship and what was actually done in the clinical setting. Knowles's theory of active learning framed the student-preceptor relationship and overall adult learning methods for this study, as it was based on learning from previous experiences and applying that content to the current, applicable clinical situation (Knowles, Holton, & Swanson, 2015). The purpose of this qualitative study was to explore the perceptions of sonography students and their clinical preceptors regarding what constituted best practices in the evaluation of students in the clinical setting.

## Definition of the Problem

In the 2-year community college sonography program, students indicated to program faculty that an inconsistency existed in the evaluation practices among some clinical preceptors (C. S. Rominski, personal communication, January 15, 2014). The inconsistency created additional stress for students who scored well on the evaluation at a previous site, but then scored lower at another site (C. S. Rominski, personal communication, January 15, 2014). This allied health sonography program offered three concentrations of study: general sonography, cardiac sonography, and vascular

sonography. Each year in the fall semester, a cohort of 23 students was accepted into the program. Stringent admission criteria were used to ensure that students were able to learn patient care skills, anatomy and physiology, physics, communication skills, and conceptual physics needed for competent care of future clients. The sonography program was programmatically accredited through the Commission on Accreditation of Allied Health Programs (CAAHEP).

The program philosophy was structured around competency-based learning and conceptual theory of practice. The program's mission and goals aligned with the institutional mission and goals by providing education to students in a safe environment conducive to academic and clinical learning. Initial program expectations of successful outcomes were met and are still shaping the program. Program outcomes prepared the students to be entry-level practitioners in a specific sonographic modality and satisfactory patient care providers. Over the last 18 years, the program outcomes were met by demonstration of successful professional certification.

Students were taught the core principles in the classroom while the skills were demonstrated and practiced in the labs under the direct supervision of the instructor. Once the students demonstrated knowledge of content and procedure, they were allowed to practice those procedures in a clinical setting. Clinical preceptors who were certified in the specialty assisted students in the clinical setting. The student to preceptor ratio was 1:1. The preceptors monitored the students' progress in skill development while role modeling professional behaviors. The student worked with several preceptors during the 21-month Associate Degree program while learning a variety of skills. The clinical

preceptors were responsible for evaluating the student's professional growth and skill development at midsemester and at the end of the semester. An evaluation tool developed by the program director and faculty was used to evaluate sonography students' performance.

A review of student and preceptor comments related to student evaluation by preceptors revealed that there was a gap in the interpretation of the roles and responsibilities of clinical preceptorship and what was actually done in the clinical setting. Faculty observed an inconsistency in student evaluations by clinical preceptors. The clinical coordinator also noted a problem with inconsistency (Appendix C). One student sharedwith a faculty memberthat his scores for clinical expereiencesin three different sites with three different clinical preceptors were significantly different (C. S. Rominski, personal communication, January 15, 2014). The student met expectations at one site, but was scored poorly at another site. For example, preceptors at one clinical site were more lenient with the dress code than those at another site. Faculty also perceived that some students were not treated with equal discipline or required to follow the program's policies and procedures. For instance, clinical preceptors were instructed that any student arriving late in the clinical setting must be reported but some preceptorsallowedstudents to arrive late without reporting them, while otherscompletedthe required attendance report.

Clinical preceptors were presented a copy of the Sonography Programs Student Handbook prior to student rotations. Communication between faculty and clinical preceptors occured through actual clinical visits, phone, and email. Students often

discussed their experiences in class during breaks (C. S. Rominski, personal communication, January 15, 2014). Notes were compared and students speculated as to why inconsistencies occur, with perceived personality conflicts and favoritism found during clinical experiences. The instructors were present in the room during some breaks and had heard student discussions regarding the clinical evaluation inconsistencies. Some students reported their concerns directly to program faculty.

Consistency in field training has been an issue in health care and in police training. Massoni (2009) stated that police officers lacked skills to work with diverse ages when training officers in the field. Massoni described experiences where officers had to be taught new teaching strategies to appeal to the various learning styles of baby boomers and Generation Xers. In other literature, field training for adjuncts, especially in healthcare, needed similar re-structuring for the same reasons (McChesney & Euster, 2000). Teaching professionalism via preceptor role modeling required additional training for the preceptors, including clarification of program expectations and policies (Harrison-White & Simons, 2013)

McChesney and Euster (2000) suggested that active learning promotes an interactive climate among field instructors and students, promoting experiential learning among students. In addition, modeling and teaching methods to field instructors through training seminars provided resources for preceptors to use while supervising their field practicum students.

Various reasons created an opportunity for the discordance in evaluation among the clinical preceptors. In this project study, I investigated the potential causes perceived

by sonography graduates and preceptors for the discordant evaluations and developed an action plan to bridge the gap so that all clinical preceptors evaluated students using an objective process.

## Rationale

### Evidence of the Problem at the Local Level

The sonography program's philosophy was founded on didactic instruction of anatomy and physiology, pathology, and procedure protocol in the classroom and the demonstration of the skills required for performing the sonographic procedure in the lab. Once the basic fundamentals were learned, the students transferred the learned knowledge and skills into a clinical setting, where clinical preceptors directly supervised their daily activities. Faculty noted on several student clinical evaluations that a student who scored excellent atone clinical site was scored much lower by a different preceptor from the next clinical site. Male preceptors appeared to score stricter than female preceptors (C. S. Rominski, personal communication, January 15, 2014). During evaluation discussions, students shared concerns regarding favoritism and inconsistent scoring in the clinical setting. Fortunately, student outcomes have not yet been affected by the clinical evaluations, as those evaluations only count 10% of the total clinical grade. However, the student-preceptor relationship was compromised by the inconsistent and sometimes negative feedback.

Clinical experiences are critical to the development of a student's professionalism and skill development. In the campus scanning lab, students practiced sonographic procedures on each other and the instructors, thereby learning the fundamental skills

required for a diagnostic sonographic procedure. However, after scanning the same people, usually without pathology, the student may fail to develop the critical thinking skills needed for scanning technically difficult patients or patients with complex pathologies. For this reason, clinical experiences with preceptor guidance are essential in developing a sonographer with interpretative, critical thinking skills.

Therefore, the purpose of this study was to further determine what evaluation inconsistencies occurred and investigate why they occurred, in order to identify best practices in the evaluation of students in the clinical setting. An action plan was developed in an attempt to close the gap of inconsistency based on the project findings.

**Evidence of the Problem from the Professional Literature**

Literature supported the idea that preceptor or field training provides a greater understanding for those who are responsible for training students outside of the traditional classroom. It was not safe to assume that orienting preceptors to a program assured that the practitioner was also an effective instructor. Lack of consistency among preceptors was a deterrant to effective learning throughout the many clinical rotations (Harrison-White & Simons, 2013). Preceptor training for adjunct faculty who were not full-time faculty is critical to providing evaluation consistency among clinical sites (Billings & Halstead, 2015). Teacher feedback results as a combination of personal and professional interactions with students and may result in the need of a grading rubric to maintain consistent evaluation among various preceptors (Bok et al., 2016). Additional causes for discordance in clinical training includeda variety of factors. Often preceptors were not given reduced workloads, creating more resistance to training students due to

the time consuming responsibility of precepting students. Some students took advantage of those inadequancies by performing with minimal skills or not adhering to the program policies. Harrison-White and Simons (2013) described the significance of informative training for clinical preceptors. Without adequate knowledge of the program, student expectations, and related evaluative paperwork, the preceptor did not fully understand the integration of educational content and clinical performance.

Bergstrom (2010) indicated that most students have experienced traditional learning methods and thereby take a passive role in the teacher-learner process. Clinical experiences elevated the learning process by requiring students to take a more active role in their education. Clinical preceptorship facilitated the more interactive learning process that students needed to learn and perform learned skills. Therefore, clinical preceptors were made aware of the role that they play and the expectations of the program objectives while the student was made aware of the program's expectations and objectives for learning and successful outcomes. Performance-based competency assessment provides a solid foundation for evaluating a student's ability to complete specific tasks within a changing clinical environment (Fan, Wang, Chau, Jang, & Hsu, 2015).

## Definitions

*CAAHEP*: identified as the Commission on Accreditation of Allied Health Education Programs (CAAHEP), a professional organization responsible for ensuring consistency in health care educational programs (CAAHEP, n.d.).

*Certification*: defined as the professional recognition of fundamental educational standards met by an individual associated with a specific career (American Registry of Diagnostic Medical Sonographers; ARDMS, n.d.).

*Clinical evaluation*: an objective method of evaluating the cognitive, psychomotor, and affective domains of a student performing required tasks in a clinical setting (Wass, Vleuten, Shatzer, & Jones, 2011).

*Clinical preceptor*: a knowledgeable and skilled practitioner certified in a specific health field and responsible for student training in a clinical setting (Happell, 2009).

*Consistency*: when evaluation criteria identified by preceptors as most important are consistent with the most heavily weighted criteria on the tool for Clinical Evaluation of Personal and Professional Growth in the Sonography Program (Godwin, 2012)

*Credentialed sonographer*: a certified diagnostic medical sonographer performing sonographic procedures (Society of Diagnostic Medical Sonographers, n.d.).

*Field notes*: written descriptions of what the researcher observes in the field (Lodico, Spaulding, & Voegtle, 2010).

*Field training*: teaching and mentoring students as they learn how to perform specific tasks in a functioning environment (Massoni, 2009).

*Programmatic accreditation*: the recognition of a program that has met the mandated requirements for education and positive outcomes associated with the successful training of students (Commission on Accreditation of Allied Health Education Programs, n.d.).

*Sonography*: the medical imaging field which utilizes ultrasonic sound waves to image human anatomy for medical diagnostic purposes (Society of Diagnostic Medical Sonographers, n.d.).

## Significance

Clinical preceptors must follow the policies and procedures set forth by the program, in compliance with national educational sonography training standards (Joint Review Committee of Education in Diagnostic Medical Sonography, n.d.). Inconsistency in evaluation and the enforcement of program policies warranted a deeper look into why evaluation inconsistencies occur. The information gleaned from this study will provide evidence to support the need to develop training tools to prepare clinical preceptors who evaluate student performance and behavior in the clinical setting. These training tools can be applied to the local problem, as well as other allied health programs that use clinical training teaching methods. It is important that all clinical preceptors be informed regarding their role and responsibilities as a clinical preceptor. Preparing clinical preceptors to evaluate students according to program policies may decrease or eliminate inconsistencies amoung student evaluations, thereby promoting a positive social change for all health professions.

## Research Questions

The purpose of this project study was to explore the perceptions of graduates and preceptors regarding what constituted best practices in the evaluation of student in the clinical setting. Understanding perceptions of both graduates and preceptors helped to

develop preceptor guidelines to foster consistency in evaluation of sonography students at clinical sites. Research questions were:

- How do sonography graduates and clinical preceptors describe important practices for maintaining consistency in clinical evaluation?
- What expectations do sonography graduates and clinical preceptors describe as being the most important characteristics for ensuring consistency in clinical evaluation?
- How do sonography graduates and clinical preceptors describe their experiences with equity/inequity in evaluation of professionalism and clinical skills performance?

The focus of the project study was to determine the source of inconsistency in clinical evaluations by preceptors and to explore how those inconsistencies could be changed to bridge the gap between consistent and inconsistent student evaluation. In order to improve the consistency and effectiveness of evaluation between clinical preceptors and ensure that policies and procedures are followed consistently among clinical sites, I investigated the potential reasons for such inconsistency. A qualitative case study method was used to evaluate the process for clinical preceptor evaluation of students. Once the data were collected, it was analyzed to determine potential trends reflected by perceived inconsistencies. Once the data were interpreted, a plan of action was developed to create uniformity in student evaluation and the consistent enforcement of program policies and procedures.

## Review of the Literature

In order to gather more information regarding the current practices and expectations of clinical preceptorship, I used the Walden Library to access the Education Research Complete, ERIC, Academic Search Complete, and PsycINFO databases for current literature. Although many key words were used, the most helpful terms included: *preceptorship, clinical preceptorship, active-learning, field training, and Knowles's theory*. Additional research via subscribed educational journals also provided insight into student evaluation practices in allied health.

### Theoretical Framework

Selecting a theoretical framework provided a connection between the identified problem and why the problem needed to be studied. The framework further served as a guide for the methodology that was used to study the problem. In selecting the theoretical framework for this project study, I chose to look at how andragogy occurs in the adult learner in a college setting (Knowles, Holton, & Swanson, 2015). Because adults have so much in life to distract them from learning, adults often need to physically interact during the learning process, being transformed by their learning (Taylor & Cranton, 2012). In pedagogy, one can be told something exists or how something should be done, and the concept is accepted as truth (Bennadi, 2014). However, the adult learner needs to know why the concept exists and how the concept can be best visualized. The belief that seeing is doing is an underlying theme that occurs in an occupational learning experience. To do something is to learn something. Because there are many ways to do something correctly, the evaluation of those ways can be viewed from different

perspectives as well, resulting in differing opinions. In the case of this project study, the perceptions and interpretations of those preceptors who clinically evaluated a student in a working environment parallel that same concept.

Through the adult learning framework, both preceptors and students learn by doing; students performed tasks while preceptors perform evaluations (Bennadi, 2014). Sharing experiences gave insight into the logic behind discerning to perform at a minimal level, a proficient level, or an exemplary level. These are choices that the learner and the evaluator make based on their own learning experiences.

Clinical preceptorship is a critical component of a health care student's total education. Programmatic accreditation through Council of Accreditation of Allied Health Educational Programs (CAAHEP) requires that sonography health programs are comprised of didactic instruction and clinical experiences (CAAHEP, 2012). While reviewing various conceptual and theoretical frameworks, I determined that Knowles's theory of adult learning best provided a framework for understanding the student-preceptor relationship and learning method used in the sonography program in this project study. Knowles's theory of adult learning promotes self-directed learners who know what needs to be learned and relates those concepts to actual situations requiring critical thinking skills to be applied to relevant field scenarios (Knowles, 1972).

Knowles's theoretical framework provides a firm foundation for interactive and experential learning methods. Adult learning theories includespedagogical or andragogical methods. The pedagogical theory assumes that the learner basically learns by being taught content through spoken word or lecture (McGrath, 2009). Meanwhile,

McGrath also stated that andragogy learning occurs through exposure to adult experiences that demonstrate or actively make evident the content using visual and interactive means. Teaching strategies include case studies or scenarios, role play, focus group discussion, asynchronous discussion boards, and clinical experiences.Andragogy assumes that the student had a desire to learn and is self-motivated to participate in the learning process, assuming responsibility for one's own education (Taylor & Laros, 2014). Creating useful and relative learning experiences while facilitating the growth of critical thinking skills in real-life scenarios providesthe adult learner a visual, self-revealing learning environment. Accommodating adult learners' interest in learning more about things that interest them, empowers them to be more self-directed and explore any unknowns.

Harper and Ross (2011) explained how Knowles's theory of learning was based on six assumptions that motivate adult learning:

- Adults need a reason to learn.
- Most adults learn through experential education.
- Adults should accept responsibility for their learning.
- Content must be relevant to the adult learner.
- Adults prefer problem-centered learning instead of content-centered learning.
- Adults must be personally motivated to learn.

In the sonography program used for this project study, all students are adult learners and have a reason or personal motivation to learn. My experience was that most students perferred hands-on learning and learning from the clinical experiences of faculty, preceptors, and classmates. Since the content of human anatomy, physiology, pathology, and ultrasonic imaging of human organs is an important part of the sonography program, the students find the content interesting and relevant to them. This intrinsic personal motivation to learn inspired students to dig deeper in learning the content. In addition, clinical experiences offer these adult learners the opportunity to integrate cognitive knowledge and critical thinking skills to solidify a learned concept through application of skill.

This project study was focused on the adult student who was responsible for the total learning experience by actively participating in didactic and clinical studies. Knowles's (1979) learning theory was the best fit for the sonography program's teaching philosophy and supported the study's exploration of the problem by blending the graduate's experience as a student with the clinical preceptor's experience as a clinical evaluator.

Adult learning is based on learning from previous experiences and applying that content to the current, applicable situation (Knowles, 1980). However, the learner is expected to be self-directed, gathering knowledge from didactic and lab demonstrations and relaying that knowledge to application in a clinical environment where that content was relative. Adult learning has also been applied to other professions, such as police field training and social work field training.

Cognitive skills include reading, writing, discussion, and reflection of content learned. Instructional strategies include case studies, role modeling, writing, and interactive small group activities. Clinical preceptorship is composed of both learned cognitive knowledge and reinforcing those concepts through a variety of instructional strategies. In addition, learning resources provide opportunity to work with equipment or live scenarios which allowed for application of learned content. Performing a learned skill solidifies the learned content. Field training and clinical preceptorship allow students to experience the performance of learned content while reflecting on the experiences and outcomes of others' performances.

In an article exploring the reasons for poor preceptorship outcomes and the need to provide preceptorship planning, Willemsen-McBride (2010) indicated that clinical preceptors are often overwhelmed with an increasing workload while managing recently graduated mentees. Because preceptorship stems from the fundamentals of experiential learning, this teaching and learning method facilitates the transfer of knowledge to working skills in an environment prepared for on-site experiences. Learning in realistic environments through hands-on activities provides a concrete opportunity for reflective recall in conjunction with application of critical thinking skills that lead to active learning. When students work with skilled professionals who model acceptable behaviors, they learn to apply a variety of techniques for accomplishing the same task, thereby completing the total learning experience through accomplished multiple cognitive, psychomotor, and affective learning objectives.

## Clinical Preceptorship and Field Training

My review of the literature provided a variety of examples where formal clinical preceptorship and field training was structured and provided prior to working with students. Literature also confirmed the need to provide preceptors with a variety of instructional strategies to assist them with meeting the learning needs of diverse ages within a given class. In this section, I present examples from literature that support the need to provide effective training for preceptors.

### Training for preceptors.

Massoni (2009) indicated that in order to understand how to teach precepted students in a training enviroment, the instructor must first understand the social and cultural needs within each generation. Massoni's review of the Field Training Officer Program at the South San Francisco's Police Department began after an almost 50% failure rate was noted in the students. A serious concern arose when qualified recruits were hard to find and a review of the cost associated with time and expense for training and hiring was evaluated. As a result of interviewing field training officers and program administrators, Massoni discovered that instructors were not informed about the learning styles of the students and how to accommodate a variety of learning styles by varying teaching strategies. From that knowledge, the researcher determined that an instructor can better prepare for variations in learning styles by learning how to identify those styles and adjust teaching strategies to meet the diverse needs of students. It was determined that Field Officer Training must include additional training in teaching and evaluating a variety of student learning styles.

In a practice-based project study, Harrison-White and Simons (2013) stressed the importance of training preceptors for teaching and role-modeling in a clinical setting as a clinical setting is much different than that of a traditional classroom. The researchers selected three preceptees and three preceptors and asked them to complete a questionnaire that asked their perspective and experience with preceptorship teaching models. A review of those questionnaries revealed that there were added pressures for those preceptors mentoring students in a clinical setting. Findings supported that when working with real patients with illnesses, that preceptors would monitor every aspect of the student's performance and skills in an effort to reduce student errors. Bengtsson and Carlson (2015) conducted a qualitative study to evaluate which skills would be beneficial for preparing technologists for preceptorship. They found that critical reasoning, effective communication, and teaching strategies would be most helpful.

In Rogan and McDonald's descriptive study (2009), the researchers found that clinical preceptors perform an important part of education by socializing the student in the healthcare environment and that the preceptor must have a clear understanding of their responsibilties and roles in the precepting environment, including how to instruct and assess the student. By understanding program expectations and student learning styles, clinical preceptors were better prepared for socializing students to their work environment. Active participation in a clinical setting guided by program objectives provided a pathway for learning to occur. Hiemstra (2003) suggested that more learning occurs outside of the traditional classroom due to the increase in distance learning and the need to apply learned content in a realistic setting. Hilli, Melender, Salmu, and Jonsen

(2014) presented results of a qualitative study the determined positive student-preceptor relationships augment learning and further development student leadership skills. Walker, Dwyer, Moxham, Broadbent, and Sander (2013) evaluated students who were taught by preceptors assigned by the clinical facility versus students who learned as a group led by a facilitator. Walker et al. (2013) concluded that the both methods successfully nurtured the students critical thinking skills, but most students preferred the facilitator method as it cultivated a deeper relationship with the facilitator or instructor. Carlson (2015) supported the theory that preceptors must create a learning climate conducive to developing critical thinking skills while maintaining professional demeanor to earn credibiality as an effective healthcare provider.

Hundersmarck (2009) studied ten randomly selected cadets in a regional police academy and observed them during the 16 week program. He collected data from structured interviews that occurred during various points along the program. In addition, he observed and interviewed two of the cadets as they completed a field training officers program. Findings revealed that learning based entirely on traditional lecture was an ineffective teaching model for visual or active learners. Engaging learners to think critically elevated the level of learning. Field training promoted a higher level of learning by requiring students to apply learned content to real-life situations. Monitoring the cadets from initial training to field education training allowed the researcher to see both perspectives of the learning process, as a student and then as a trainer. Hundersmarck concluded that a learner-centered constructivist approach to learning was best for

ensuring that recruits became truly engaged in the learning process by demonstrating behaviors relative to learned content.

The need for effective preceptor training was evident throughout the literature search. Based on an extensive literary review and person experiences as a preceptor and faculty member, Barker and Pittman (2010) indicated that field training in performance-based education was an essential collaboration between the educational entity and the field environment. Active learning in an external environment reflective of required skill allowed the student to demonstrate learned content and practice those skills under the direct supervision of an accomplished provider. This time-defined and goal-oriented partnership focused the student to achieve within the limits of acceptable practice in that field. The preceptor facilitated and role-modeled the behavior required to successfully complete learned tasks.

Barker and Pittman (2010) further stated that the educator-preceptor relationship must effectively communicate its expectations and uniformly transfer those objectives for all students. Barriers included lack of time for effective training or total learning experience to occur, lack of available physical resources to adequately provide a thoroughly learned concept, and limited training opportunity due to volume overload.

In a qualitative study, Rye and Boone (2009) developed a survey to poll the 248 program directors of accredited Respiratory Care programs in the United States. The survey requested that the respondents answer questions about their existing preceptorship training methods. In the Respiratory Care precepting study, the amount of preceptor training varied from 1 to 8 hours and was often unstructured; the training was led by the

clinical coordinator in an informal setting. Findings showed that ample preceptor training opportunities may offer benefit to the development of effective field preceptors, especially in respiratory therapy. The authors identified a need for clinical preceptorship in a local environment and noted that current therapists were hesitant to mentor students at the bedside for fear of failure to adequately train others. A preceptorship model required a practicing clinician to partner with a student to provide concrete learning experiences through role socialization.

McClure and Black (2013) completed a literature review on the role of clinical preceptors and noted that some form of training should precede clinical preceptorship. In order to identify what should be included in the training, the authors collected data from literature surmising the most common concerns regarding precepting in a clinical environment where patient care was the priority. Being a preceptor for undergraduate nursing students was a complex and multifaceted responsibility with limited resources and time, few rewards, and often difficult processes. Expectations from faculty, staff, and students insisted that the preceptor be knowledgeable of instructional strategies, a master of content and performance, as well as able to delicately communicate feedback to struggling students while still maintaining an overwhelming patient care workload. The clinical environment was in constant change and bridging the gap between urgent need and a learning experience was paradoxical. The authors suggested selecting preceptors with professional qualities which included facilitation of learning, effective communication skills, conflict resolution skills, and the ability to organize the learning environment in order to maximize student learning.

In a cross-sectional descriptive design study, Brooks and Niederhauser (2004) evaluated the expectations of both nurse preceptors and program faculty via survey. The purpose of the study was to gather enhancement ideas for improving the precepting experience. The survey with a response rate of 67% revealed that the preceptor-faculty relationship could be improved by structuring guidelines for clinical visits and standardizing consistent communications.

Elnicki and Zalenski (2013) used a qualitative study to evaluate the integration of student goals and preceptor feedback during evaluation of students in an outpatient care facility. They assessed the relevance of student exams with clinical evaluations by using correlations, chi-square, and comparisons of means. An interesting outcome from the study revealed that students' perceptions for clinical evaluation focused on the accomplishment of specified goals for coursework while the preceptors' perceptions for clinical evaluation focused on behavior and performance. The students believed that if the list of goals were successfully completed, then performance was acceptable. Meanwhile, preceptors identified the strengths and weaknesses of each student and scored accordingly.

Phillips, Fuller, May, Johnston, and Pettit (2014) described a case-based scenario in which preceptor-student conflict resolution was addressed. The case-based scenarios provided role-play and critical thinking opportunities for the training preceptors to practice conflict resolution skills. These sessions were part of a formal training workshop for participants who desired to be clinical preceptors for a pharmacy program. Discussion of immediate and long-term solutions afforded the preceptors an opportunity

to creatively resolve conflict when challenged with student concerns. Structured informative training of preceptors yielded a more unified appearance between the preceptor-faculty partnerships.

Moridi, Khaledi, and Valiee (2014) sampled 230 nursing students to identify stress-inducing factors that students experienced with clinical preceptors. The study identified the most stressing situation was dealing with unpleasant student-preceptor relationships citing personal biases as a concern for favoritism. A mixed method conducted by Reeve, Shumaker, Yearwood, Crowell, and Riley (2013) used an online survey to evaluate nursing students' stress in the educational experiences, on campus and in clinical. Students agreed that social support from faculty in managing the course content and clinical stressors were vital to beneficial learning.

Another qualitative study supporting the need for formal preceptorship training and improved communication techniques was a grounded theory study conducted by Taylor, Hasseberg, Anderson, and Knehans in 2010. Dietetic students, clinical dieticians serving as preceptors, and program faculty were interviewed both individually and through focus groups. The researcher discovered some common trends related to the efficiency of the preceptor-student relationship. First, the limited amount of time was a central theme indicating that in the working environment, many preceptors could not devote the amount of time they wanted to teach the students. Second, preceptors had varying levels of instructional experience in adult learning and fundamental teaching styles, thereby yielding inconsistent teaching patterns between all students. And finally, effective communication skills, coaching skills, and methods for providing constructive

feedback varied among preceptors. The findings of the study were used to develop a broad clinical preceptorship training model to enhance the precepting skills in many fields, with focus on teaching strategies for adult learning, learning style recognition, conflict resolution, time management, and effective communication and student feedback.

Wiseman (2013) conducted a qualitative study to determine potential barriers to being a clinical preceptor. An online survey was used to identify motivators for being a clinical preceptor. Lack of incentives led the list of reasons for not becoming a preceptor.

Bowers, Hitt, Hoeft, and Dunn (2003) presented a military field training study in which he monitored cadets who were placed in real life training scenarios so trainers could evaluate skills and affective behavior changes when put in a position to utilize learned concepts from the classroom. After direct observation and collection of field notes, the trainers used Kirpatrick's training model to evaluate the effectiveness of the field training sessions (Appendix F). The trainers evaluated the participants' reaction(s) to the training experiences to make sure that the training provided more indepth understanding of the learned concepts. Clear objectives and anticipated outcomes were presented to ensure that specific concepts were taught. Trainers and participates shared in debriefing sessions after each activity to identify behavioral changes representing that concepts were learned by those participating in the field experiences. And finally, through skills evaluation and cognitive recall, the trainers measured the knowledge acquired from the training.

Graver (2012) presented a case study where the problem existed within a local detention facility where the tactical skills of jailers and detention officers were lacking consistency and skill. Participants volunteered to actively learn the proper method for detaining inmates and securing them in the facility. Once the participants reviewed the policy and procedure manual in a classroom setting, trainers demonstrated those required detention skills, and provided opportunity for the participants to practice. Participants were tested on the policy and procedure manual and evaluated in the field training exercises, demonstrating an increased level of skill and consistency in job performance.

Field training is an integral part of social work curriculums by allowing students the opportunities to practice techniques in actual situations involving real clients. Professional codes of ethics and acceptable practices are often identified by any profession using field training as part of the learning process. Small group discussions, simulated critical thinking exercises, and role playing provided excellent opportunities for students to apply learned concepts while reflecting on what worked and did not work during the experience (McChesney & Euster, 2000).

Identifying clear objectives and expected outcomes guided training sessions (McKimm & Swanwick, 2009). Informing learners what they should accomplish during the training sessions and informing teachers what they should help the students achieve are essential for effective field training. Cote and Bordage (2012) conducted a qualitative and correlational study of preceptors regarding important factors for being an effective preceptor. Results indicated that students must develop critical thinking skills and

realized that those skills are determined by providing immediate and valuable feedback to students during the clinical experience.

Although the above examples represented the value of preceptorship and field training in other professions as well as medicine, there were no studies that supported the need for preceptorship or field training specifically in the sonography profession. I speculated that the benefits of field training and clinical preceptor in the sonography profession would be similar to those presented above. However, I wanted to understand the lack of consistency among evaluating preceptors identified in this project study.

**Field Training in the Health Professions**.

After reading about a variety of professions that use field training when developing student skills, I focused the additional review of literature on health professions. Repeatedly the literature review supported the need for clinical preceptor training and the value of their role in adult learning. Altmann (2006) indicated that preceptors are an important piece of the adjunct faculty in nursing programs and that each preceptor should be carefully selected based on professionalism and performance. Altmann believed that the clinical preceptor bridged the gap between theory and practice. It was further suggested that the preceptor complete a program orientation to include effective communication skills, teaching techniques and methods for various adult learning styles, conflict resolution techniques, and efficient evalution methods. Furthermore, the preceptor should be evaluated by the program faculty and students to insure that the preceptors are performing as they should.

Carlson, Wann-Hansson, and Pilhammar (2009) presented an ethnographic study of cultural behaviors between the cardiology and surgical floors and decided that clinical preceptors are pivotal to student learning within a clinical setting. The researcher also suggested that the preceptors need education regarding teaching strategies for the adult learner and believed that preceptors should share in the strategic planning of the program,thereby improving communication with faculty to better focus student learning activities that they facilitate. Chan and Sharma (2013) asked biology students to complete an evaluation of anatomy teachers who used traditional methods for instruction versus those who used the one-minute preceptor method often used in clinical settings. Although the one-minute method was succinct and somewhat effective for focusing discussions, it was least favored by those students evaluated, citing that there was a loss of preceptor-student relationships.

Bott, Mohide, and Lawlor (2011) agreed that clinical preceptors need skills for effective clinical teaching by using role modeling and socialization techniques so students can best acclimate themselves to the health profession while caring for sick patients at the same time. McGrath and Princeton (1987) stressed the value of clinical preceptor training programs in facilitating the transition of a graduate from a new practitioner to a role model. Schaubhut and Gentry (2010) produced a reflective study of nursing preceptors who participated in preceptorship workshops to improve mentoring and evaluative skills. The workshops included collaborative relationships between clinical preceptors and the program faculty, clinical teaching strategies, adult learning theories, student evaluation, generational differences, theory of application, improving

critical thinking skills, and conflict resolution. Benbassat (2014) described another perspective where he argued that role models may help students overall, but many may model undesirable practices or characteristics as well. He felt that student evaluation of the preceptor-student relationship be routinely reviewed in order to keep the role models accountable for their behaviors and preceptor practices.

Dillon, Barga, and Goodin (2012) presented a plan for a preceptor recognition program where excellent role models were recognized for their positive efforts and often shared ideas with other preceptors. A Logic Model Framework was used to develop and implement a method for enhancing preceptor resources for transitioning nursing students to entry level nurses. Most preceptors did not receive stipends for sharing their expertise and time. A recognition program offered incentive by knowing that the preceptor empowered others and advanced the profession.

Yonge, Myrick, and Ferguson (2011) discussed the inability of clinical preceptors in rural or distant clinical sites to attend training sessions or strategic planning meetings. The researcher stressed the importance that all preceptors understand the program objectives and the evaluation tool to insure consistent evaluation of students among clinical sites. Haggerty, Holloway, and Wilson (2012) demonstrated how the clinical preceptor is crticial in bridging the gap from theory to practice for students. The researcher insisted that effective clinical preceptors require initial and on going education regarding evaluation techniques and must have continual communication with faculty. In the study, the focus group stressed that the selection criteria of preceptors should include

clarification of the preceptor role, education regarding teaching and evaluation techniques, as well as noting the preceptor's desire to teach students.

An exploratory descriptive study by Kelly (2006) revealed that student perceptions of the clinical evaluation process differed from those of the preceptors. Students rated their teacher knowledge and communication skills, especially listening skills, as most important. Since the clinical setting remains the most single important resource in developing clinical skills, the students valued calm, respectful, and patient preceptors. It was recommended that preceptors be appropriately prepared for instructing and evaluating students and that having the students evaluate the preceptors would provide additional insight into preceptor performance.

McInnis and Wofford (2006) suggested that college faculty conduct clinical visits to work with students and evaluate the student-preceptor relationship. Hoebeke and MacLeod (2006) suggested that faculty should take an active role in clinical preceptorship by evaluating students in the clinical environment, noting that the clinical preceptors were not the ones directly involved in awarding the degree.

O'Brien et al. (2014) reported about a 2010 comprehensive study conducted by the Health Workforce Australis on clinical supervision and student paring. Findings from the study indicated that a 1:1 ratio worked best for students in a clinical healthcare setting. Factors that affected the student-preceptor relationship included staffing issues, patient acuity, patient-staff workload ratios, case volume and type, and whether the preceptors had formal training regarding the role of a clinical preceptor. The researchers found that preceptors must be interested in teaching, understand their role as a preceptor,

have conflict resolution skills, and have the ability to link the clinical experience with what the student learned in the classroom and lab. Students evaluated preceptors with formal training higher than those without training.

Young, Vos, and Shaw (2014) conducted a retrospective study where pharmacy students were asked to evaluate the preceptors in the clinical affiliates. The students indicated preceptor professionalism, an enviroment conducive to learning, and being able to discuss clinical experiences openingly with the preceptors were most effective characteristics in supporting student learning.

Physical therapy students in Georgia were asked to participate in a one-week clinical experience for an under-served community with other health care providers (Anderson, Taylor, & Gahimer, 2014). The study suggested that the more engaged the students were with other students and preceptors, the more that professional behavior improved. Role-playing and interacting with interprofessional faculty and preceptors allowed the students to develop a higher level of socialization and critical thinking skills.

**Clinical Evaluation of Professional Growth and Performance**

Clinical experiences provided ample opportunities for healthcare students to learn professionalism, effective communication skills, critical thinking skills, and time management. Students are evaluated for their performance of learned skills by performing tasks in a clinical setting. Competencies are skills-based testing performed by the student under the direct observation of theclinical preceptor. Students are evaluated on skills perfomance, recall and implementation of learned imaging protocol,

patient care skills, and critical thinking skills demonstrating an affective behavior change and indicating that learning did occur.

Hawranik (2000) stated that the goal of personal and professional growth evaluations is to be consistent and truly relect a student's performance. In order to do so, the evaluation instrument must be valid, objective, and thoroughly understood by both students and preceptors. Isaacson and Stacy (2008) suggested that faculty and students often interpret clinical course objectives differently because there are a lot of academic terms that are similar, but may vary in meaning due to one's personal perspective or interpretation. For example, following a dress code implied that a student is dressed in a specified way. However, if the program's dress code was not explicitly defined, then appropriately dressed could mean a lot of different things to a patient, a preceptor, coworker, or physician. Isaacson and Stacy also stated that subjective terms can be easily misinterpreted and therefore difficult to assess consistently among preceptors.

Butler et al. (2011) conducted a study to assess the clinical preceptor's perspective of the evaluation method and assessment tool. Although there was a low response rate from his participants, most stated they had difficulty interpreting the tool's language. It was also suggested that more effort be used in matching the preceptor with the student to insure a better learning experience.

In a case study group evaluating a mixed group of pediatric nursing students in a specialist nursing program in a Swedish University, Bergstrom (2010) conducted a qualitative study consisting of semi-structured interviews five weeks after starting the course and again after completion of the course. Learning to make decisions in an actual

patient environment supported active learning for a variety of learning styles. Mentoring relationships promoted students to learn and grow professionally while enhancing leadership opportunities and career mobility for preceptors who desired to become managers or future leaders. Students expected strong teacher direction yet became more engaged with learner-centered teaching. Students were capable of reproducing learned behaviors but were often more engaged when they assumed responsibility for interpretation of content and decision making (Bergstrom, 2010).

After reviewing the evaluations received following a preceptor training workshop, Charleston and Goodwin (2004) evaluated the feedback from participants in the workshop. All of the participants were informed that a post-session evalution would be conducted for purposes of identifying commons trends in the role of the preceptor and student relationship. Charleston and Goodwin suggested role socialization into a profession was often inspired by preceptors or field trainers who demonstrated an excitement for teaching and love for the profession. Matching personalities and clearly stated objectives promoted effective preceptorship training opportunities in various fields. For example, field trainers in law enforcement education promoted active learning by engaging students in actual field training scenarios (i.e. stopping a speeding vehicle). Field trainers role-modeled the behaviors required for effectively stopping a speeding driver and addressing the concern when dealing with a stopped driver. Students learned to reflect on the preceptor's behavior and actions while learning appropriate skills needed to effectively enforce local laws.

Clynes and Raftery (2008) reinterated that effective feedback from clinical preceptors further develops a student's interpersonal and intraprofessional skills while increasing his confidence and self-esteem. Clynes and Raftery's study also provided insight into the student's perception of feedback when comparing different preceptor's methods for discussing professional growth. Findings from the study revealed that there were significant inconsistencies and that many preceptors only share negative feedback with minimal praise. Although the preceptor's intentions were not studied, it was noted that preceptors without formal training prior to preceptorship had more difficulty with accurately expressing their feedback. Isaacson and Stacy (2008) described student concerns that poor or less than optimal performance may be attributed to the student's nervousness when performing under the pressure of receiving a grade. They also indicated that grading rubrics were excellent tools to help the student and preceptor better understand the levels of expectations for performance.

A review of literature supported the need for consistency in clinical preceptors' evaluation of students by presenting a number of scenarios in which formal clinical preceptorship training yielded better prepared preceptors. Evidence from the literature reviewsupported the need for preceptors to fully understand their role in the evaluation process of students and the clinical objectives. In order for preceptors to evaluate fairly and consistently, it was important for the preceptors to know how to effectively communicate and assess student performance and behavior. Isaacson and Stacy (2008) described concerns from faculty and preceptors who had difficulty understanding the language of the evaluation instrument. The multiple domains (cognitive, psychomotor,

and affective) needed additional explanation for preceptors who were unfamiliar with the terms. Some preceptors commented that the tools were lengthy and time-consuming since they had dual roles as an employee and as a preceptor. Concern was raised over the scoring of students who may become potential coworkers after graduation. Walsh, Seldomridge, and Badros (2008) also noted concerns in evaluating clinical performance due to evaluator bias. Some preceptors became friends with the students socially, thereby impairing professional judgement when evaluating performance. Walsh et al. (2008) believed that focused, objective evaluation tools and formal preceptor training would prevent subjective grading. Polatajko, Lee, and Bossers (1994) conducted a study of Canadian occupational therapy students and evaluated the competency testing and professional growth assessment tools for clinical students. The study confirmed that personal bias of an evaluator can still effect objective ratings.

The military used field training effectively to teach trainees how to search for improvised explosive devices (Sharps, Herrera, & Lodeesen, 2014). Trainees were required to recognize mock explosive devices strategically placed in a practice environment. Outcomes proved that this field experience increased the awareness and accuracy of device detection by trainees.

**Developmentof Clinical Evaluation Tools**

Developing effective, valid, and objective evaluation tools to use in the clinical setting requires communication and strategic planning between the program faculty and clinical preceptors. Understanding the language within the tool and the expectations for each gradeable skill or professional quality is essential. Auewarakul, Downing,

Jaturatamrong, and Praditsuwan (2005) stated that no single assessment of clinical competence exists to measure every facet of clinical competence and professional growth of a student in a clinical learning environment. Hawranik (2000) stressed the importance of a valid evaluation instrument that would accurately reflect a student's performance.

While conducting this project study, I reviewed the evaluation tool used to assess the students in the identified sonography program. The tool was titled "Clinical Evaluation of Personal and Professional Growth" (Appendix B). Each line item appeared to detail the expectation clearly; however, personal interpretation or bias could be possible. Although the expectations were probably communicated to the students by the faculty, the preceptors may have had a different perspective. Faculty designed the clinical evaluation form with input from clinical preceptors as well as graduates. Their perspective was important to capture the whole circle of learning, from student to preceptor and faculty. At the time of the project study, there was not a formal training for clinical preceptors.

The actual evaluation tool appeared to have been edited over the years for clarification of expectations and provide additional explanation for each line item. It was noted that the profession and behavioral qualities demonstrated by students counted only 30% of the evaluation's total score, while the actual performance of skills counted 70% of the evaluation's total score. Performance was scored much heavier than personal and professional qualities.

## Implications

Findings from the project study provided insight into why the same student could receive varying evaluations from different preceptors for the same clinical performance. A few project ideas were considered, including one-on-one training with each preceptor. Since there were 25 clinical sites, the time required for individualized training sessions would have overwhelmed the faculty. Another project idea used online training modules for preceptors. However, the benefit of focus groups and interactive sharing of ideas would have been lost with asynchronous learning. The most effective idea for preceptor trainingwas to develop a training program that would inform clinical preceptors how to best discern student performance and keep student expectations consistent among all clinical sites. The purpose of this training for clinical preceptors is to help all evaluators use the same criteria when evaluating a student's clinical performance. An evaluation scale was developed to use with new preceptors to ensure understanding of expectations for performance and professionalism.

My desire is that the training session will be used in similar allied health programs to assist future clinical preceptors in learning how to best assess student professional growth and performance. Adjustment for field specific training may have to be adapted into the session, but the overall commitment to effective clinical preceptorship will be foundational.

## Summary

Inconsistency in clinical evaluations of healthcare has resulted in skewed reflections of student growth and performance, especially when the same student was

evaluated by more than one clinical preceptor in the clinical setting. In section one I have presented the foundational background for the project study. The problem, inconsistency of clinical evaluations of sonography students, is reflected in a variety of other professions that use field training for students. Relevant definitions with explanation of terms used in the project study have been presented, along with a review of related literature directly related to the research questions. Implications for studying the problem have also been described.

In the next section, I present the research methodology for this project study by providing a thorough description of the design approach, sample size and selection process, and data collection process. Data analysis focused on the interpretation of transcribed interviews from five program graduates and five clinical preceptors. Limitations noted within the project study are discussed and potential biases noted.

Section 2: The Methodology

## Introduction

A variety of research methods exists so using the most effective method was essential for best addressing the project study's research questions. Research is a process by which the researcher investigates an identified problem or question in order to better understand the topic. The process involved identifying a problem, justifying that it was a problem both locally and societal, and then exploring possible solutions to address or improve the problem. In addition, the philosophical premise entwined within the research process includes an epistemological aspect, a theoretical perspective, and a methodological approach (Crotty, 2015). The epistemological aspect of research deals with the relationship between the researcher and the topic. The theoretical perspective of a research process compares the documentable influences of previous quantitative and qualitative researchers via a literature review. The research process follows a structured course of action or methodology, providing a basis for data collection, analysis, and presentation involving either deductive or inductive reasoning techniques (Lincoln & Guba, 1991).

In qualitative research, the participants are studied in their own environment, a naturalistic mode of inquiry, and the researcher demonstrates empathic understanding (Yilmaz, 2013). A constructivist paradigm allows an emergent and flexible approach to searching for a pattern in a socialized environment. In quantitative research, a researcher offers an outsider's perspective after using a formal instrument to gather data, further

reducing the collected data to numerical outcomes. This deductive reasoning offers an objective look at reality.

In order to understand why the qualitative case study design was the best fit for this study, I reviewed quantitative and qualitative research methods and designs. The quantitative research approach uses data collection processes to evaluate stated parameters within the context of the problem (Punch, 2013). Strauss and Corbin (2014) stated that qualitative research methods are best fitted when the researcher wants to understand more about a specific phenomenon, especially when it involves personal perspectives. Eisner (1991) noted that qualitative research allows "voice" or emotion to be incorporated into the text or interviews. Lincoln and Guba (1991) believed that if you want to fully understand a phenomenon involving people's opinion, then the researcher must become involved in those experiences through observation and interviews.

Data are quantified and numbers are used to provide a statistical inquiry in an objective manner. Data are collected from a number of resources; however, surveys and correlation studies are often used. Quantitative research requires the statistical comparison and prediction of related variables through experimental processes or through data collection from documentable resources. Reliability and validity are concerns in statistical quantitative research.

I did not select the quantitative research approach for my project study, as the problem identified appeared to be related to the perceptions of students and clinical preceptors, not requiring deductive reasoning via statistical models. Actual grades or physical data were not collected as it was not the best answer for evaluating the research

question of why the same student may be evaluated differently from two different clinical sites. Therefore, field notes and interviews from both students and preceptors afforded the most effective approach to gathering the data for better understanding the problem of inconsistency in clinical evaluations. The research tools used in the project study best parallel the qualitative research method.

The qualitative method of research allowed the investigation of the human side of the problem by providing insight into the social and behavioral aspect of the topic under discussion (Yilmaz, 2013). In this case study, the inconsistency in performance evaluations was explored. As researcher, I tried to listen intently, accurately record the responses of those interviewed, and observe while avoiding personal biases. Although the research process revealed emergent information, inductive reasoning was used to discern the analytical outcomes in regards to the possible reasons that inconsistency exists. The findings were comprehensive and potentially applicable to similar situations or problems.

According to Creswell (2012), six research designs exist to assist in qualitative research: phenomenological, ethnographic, grounded theory, historical, case study, and action research. The phenomenological design allows the researcher to examine the experiences of others by talking with the people involved. Direct observations and interviews provide data. Descriptive field notes are helpful as interviews were conducted. Phenomenological research was not appropriate for this project study as the phenomenological research often consists of long term interaction with a set of

participants in order to better understand their interpretation of an experience (Creswell, 2012). This project study was not a long term study of participants.

The ethnography research method did not apply to this project study as the purpose of an ethnographical study is to focus on the cultural tendencies of a particular group in a specified setting of events (Lodico et al., 2010). Direct observation, interviews, and a detailed, documented, long term study of the people and their environment renders data for ethnography research. The ethnographic research method did not appropriately fit this project study as the identified problem was focused and the research questions were specific to a certain group of students and preceptors, not a culture.

Another qualitative method is the grounded theory design based on social interactions of people as they deal with certain issues. Jacelon and O'Dell (2005) indicated that this method is often used in the healthcare setting and focuses on how people relate to a situation or the environment around them. The result of the grounded theory design is the development of a theory-based on documented observations and discussions with those involved. This design did not meet the needs of my project study, as the identified problem could not be answered through observations of social interactions and my purpose was not to develop a theory.

Other qualitative research methods include the historical and action research design. The historical approach to qualitative research involves the reflection and detailed review of historical artifacts that offer insight into an identified problem (Creswell, 2012). This method was not an effective match for my project study as the

program was only 18years old and the data collected did not offer insight into the currently identified problem. Action research design provides the researcher with the ability to complete the research and develop some form of intervention to address the problem. Once the intervention has been offered, the researcher reviews the effectiveness of that action. The purpose for my project study was not to develop, implement, and evaluate an intervention.

The final approach to consider as a qualitative research method is the qualitative case study design. According to Stake (2010), case study research is designed to investigate a problem and to gain insight as to why that problem exists. Although case studies may use multiple data collection methods, individual interviews provided the primary information needed for this project study. Yin (2013) suggested that the case study method allows researchers the chance to explore real-life scenarios in an effort to use those learned concepts to better prepare someone for a specific role. It is also an excellent way to gather insight into the participants' perception about the problem. I felt the case study design best reflected my intentions for evaluating the participants' perceptions about consistency in the clinical evaluation of students.

## Qualitative Case Study Design

A qualitative case study allows the researcher to better understand a phenomenon using descriptive and exploratory methods in a natural setting (Yin, 2013). The study involves a bounded entity with undefined overlapping of contextual and situational conditions which needs clarification. The situation or environment is usually a relevant event or circumstance that needs to be evaluated to better understand behaviors and

practices associated with evaluation of performance. Researchers will familiarize themselves with the environment and participants in order to design research questions and determine methods of data collection that best confirms that a phenomenon exists and that there is a problem. Once participants are selected, qualitative research methods are employed and the results are analyzed and common trends and themes are identified. Although a definitive answer to the research question may not finalized after an in-depth field review, the emergent nature of case study methodology expands the overall knowledge of the topic for a better understanding.

In order to address the problem identified as inconsistent clinical evaluations, a bounded qualitative case study was used to uncover preceptor and graduate perceptions in regard to fair professional behaviors and performance skills. Interviews were used to gather data from a total of ten participants, five graduates and five clinical preceptors. Faculty was not interviewed as part of this project study because they evaluated classroom work and lab performance, not clinical performance. Findings from the project study were used to better understand the local problem. Field notes were made to reflect my nonverbal observations while collecting data during the interviews.

This project study focused on the perceptions of graduates and clinical preceptors in regard to the evaluation of a student's skills performance and professionalism. A qualitative bounded case study provided the best fit for this project study because the population was a specific group of graduates who had completed the sonography program. This case study provided insight into the need for instructive preceptor training in preparation for completing student clinical assessments. This type of problem reached

far from a local environment and extended to other professions (i.e., police field training, nursing, respiratory therapy) as well. The findings provided valuable insight into future educational programs and improved student-preceptor relationships.

## Participants and Purposeful Sampling

Participants for this case studyrepresented sonography graduates and clinical preceptors at a specific 2-year community college. Names and contact information of graduates who completed the sonography program in the last 2 yearsand preceptors were requested from the clinical coordinator. The sample or the project study included five graduates of the allied health sonography program and five clinical preceptors representating the clinical affiliates. Initially, a total of 10 invitations (five graduate and five preceptor) were sent via my Walden email to the potential participant's email address. If one of the participants did not respond by the response deadline or declined to participant, I emailed the next participant on the list. None of the preceptors were paid employees of the college. However, a letter of cooperation was sent to the college requesting permission to contact the clinical coordinator for graduate and preceptor information contact information. The college approved the interview process and research request.

The participants were selected using a purposeful sampling method, capturing graduates within the last 2 years.Purposeful sampling allowed me to intentionaly select the participants and setting to be used in the study. However, it has been noted that this method of sampling does not render itself the ability to take the study's findings and apply them to other situations (Yin, 2013).

It was anticipated that five graduates and five clinical preceptors be engaged for this study in order to achieve data saturation. This number of participants was manageable and provided enough information that appeared similar but not redundant. The smaller the sample size, the more in-depth the interviewwas feasible per participant while establishing a collaborative and approachable relationship between the participants and the researcher. Sandelowski (1995) indicated that the sample size should be determined by the researcher so that the amount of data collected could be reasonably managed while maintaining a realistic researcher-participantrelationship and still provide enough data for an effective outcome. Although the relationship evolves over a research study's duration, it should remain collaborative and professional (McGinn, 2008).

By asking graduates to be participants instead of current students, Ireduced the chance for research bias because I was not directly responsible for grades being earned as research was being conducted. Sargeant (2012) noted that the selection process should focus on a purposeful method so that the participants were the best candidates for understanding the phenomenon under study. The participants understood why the study was being performed and were presented with that information in the participant letter.

Purposeful sampling can range from having numerous specifically selected research participants with layers of subspecialties within the group to being very selective. The selection of participants for this study was based on the study's specific needs and related to the phenomenon in question (Palinkas et al., 2013). Since the case study reflected a bounded group, the participants were selected based on the following criteria:

- Graduates of the sonography program who had completed the sonography program more than 2 years ago and had worked for at least one year. Each graduate attended at least three different sites for clinical experiences. Graduates were male or female and were certified in at least one specialty. Ethnicity was not used as a criterion.
- Preceptors must have had at least 1 year experience with the program and be from a different clinical site from the other preceptors. Preceptors were male or female and were certified in at least one specialty. Ethnicity was not used as a criterion.

A total of 10 participants consented to participate in the project study. This homogeneous sampling for my project study reflected the type of individuals directly involved in the clinical experiences, past (graduates) and present (clinical preceptors) and provided a large enough, yet manageable sample for rich data collection and analysis.Each participant was given an opportunity to ask questions about the project study and asked to complete a participant demographic form (Appendix D). Each participant was assigned a participant number.

Researcher-participant working relationships are critical when gathering research while remaining bias-free. I introduced myself to each participant, thanking them for participating in the project study. The interview took place in a comfortable, private environent, familiar to the participant. Because I knew the graduates and preceptors, I believed that each participant felt comfortable with the interview process. Lodico et al.

(2010) stressed the importance of identifying potential ethical issues and protecting the participants from harm.

Informed consent was obtained from each participant prior to the interview process. In this project study, each participant was required to submit an informed consent reply after an email explaining the purpose of the study and the anticipated timeline. Each participant received a clear explanation of the interview process. Any concerns expressed by the participant were addressed prior to reply to the participant consent agreement. All interviews were conducted in a safe environment protected from physical harm. The interview questions did not cause any emotional stress. Each participant's responses were kept confidential by assigning a number to the interviewee and not revealing personal characteristics or details that may otherwise identify the interviewee. And finally, to ensure confidentiality, the participants' interview audio-recording and transcriptions were maintained in a controlled, locked environment.

Approval for the study was obtained from the Walden University Institute Review Board (IRB approval #is 08-18-15-0283383) before any data were collected. Recently, the community college that served as the research site established a policy regarding research studies involving the college. As per the college's research policy, I submitted a copy of Walden's IRB application to the college's Institutional Effectiveness director. Permission from the College via a letter of cooperation was granted prior to proceeding with research.

## Data Collection Process

The data collection process selected must met the needs of the researcher and provided an accurate reflection of data collected.For this project study, I collected data through a demographic information form, face-to-face interviews, and reflective field notes. Interviews provided an opportunity to capture the perceptions of graduates and clinical preceptors. Reflective field notes offered an opportunity to place emotion and visual cues that provided additional insight during the analysis and interpretive phase of the research. How the interviewee responded to a specific question was as important as what was actually stated (Blee, 1998). It was noted that interviewer bias or misinterpretation of visual cues or emotions could result in misinterpretation of raw data. In an effort to minimize these possibilities, I remained aware of potential bias or personal perspective while making field notes. Reeves, Lewis, and Zwarenstein (2006) noted the increase in use of qualitative interviews in medical research and determined that all researchers must raise the quality bar when conducting interviews by being aware of potential biases and misinterpretation of conversational gestures or emotions.

### Demographic Data

Demographic information includes personal characterisictics of research participants(Fraenkel & Wallen, 2011). Demographic information collected from the participants for this project study included the participants' role in the study, as a graduate or a clinical preceptor, the certifications obtained, level of education obtained, age, and the number of years working as a clinical preceptor or number of years employedin the sonography field.

**Interviews**

Structured individual face-to-face interviews used open-ended questions that captured each participant's perspective. One-on-one interviews were best for interviewing participants who may be apprehensive to talk in front of others (Creswell, 2012). Since the intervieweewas not hindered by speaking in front of other particpants,the individual interview provided a more confidential and honest response than group interviews. In this study, all interviews were conducted and recorded in a private setting with only the interviewer and interviewee present. As the interviewer, I remained neutral, yet engaged in the dialogue. A relaxed environment and emotional response provides an atmosphere of conversation rather than data collecting (Hoffman, 2008).

Collecting data through interview questions provides targeted responses to predetermined questions that answered a particular research question (Turner, 2010). The most common interview method is the informal conversational interview asit flows more naturally than the formal process. The foundation of the interview data collection process occurs when the interviewer is consistent among all interviews and that the content searched for is equally sought after with each participant through a focused set of interview questions (McNamara, 2014). The interviewer remainsemotionally stable without bias avoiding the tendency to sway the interviewee's answers toward a predetermined path. The interviewer should check the audio recorderto make sure that the session is being recorded and to provide transitions between major topics without losing control of the interview (McNamara, 2014). I observed the interviewee during the

interview for physical gestures or other mannerisms that added depth to the participant's answer. Confidentiality of individual interviews and responses weremaintained by storing data in a locked file cabinet in my office. It is important to assure each participant that their answers are confidential by not identifying which participant provided the reported data (Creswell, 2012). All participants were treated with respect and appreciation for sharing their thoughts. Remaining transparent as an interviewer by clearly stating the purpose for the interview and the process in which the interview occurred is important (Bulpritt & Martin, 2010). The authors also stressed that directed questioning or biased inquiring should be avoided so that the interviewee does not feel persuaded in his response.

All interviews were conducted face-to-face in a private setting with the door closed to reduce interruption or distraction. I anticipated that each interview would last less than 1 hour. All interviews were voice-recorded with a digital recorder. I determined questions for the interview process in conjunction with the comments presented in student surveys that I reviewed as well as local classroom discussions regarding clinical evaluation of students that faculty attended. The interview questions were designed to address the research questions by capturing the perceptions of graduates and clinical preceptors during the interview process (Appendix E). Most questions were open-ended, allowing additional comments by each participant. Attention was focused on identifying whether or not preceptors truly understood the expectations of the program and course objectives in order to evaluate students.

**Field Notes**

In addition to interviews, I wrote field notes that described observations made while collecting data from the clinical preceptors and graduates. These field notes weretaken during the interview and included notes of visual gestures or expressionsobserved during each interview and was used to present recollections of comments and practices observed.Reflective field notes included the observers' feelings and perceptions of the environment, participants, interactions, and observations made while interviewing the participants (Appendix F).

Mulhall (2003) stressed the importance of listening with both the ears and the eyes, as visual clues could offer a deeper meaning of actual words. Caution should betaken when the interviewer incorrectly interprets the interview data. Detailed descriptions of communications and the environment surrounding the exchange were documented as the behavior of the interviewee may speak louder than his words. The setting and participant backgroundscan provide insight into the perceptions associated with clinical experiences (Thomas-Fair, 2007).

Field notes were kept in a notebook indicating the interviewee number, date, time, and location of the interview. A simple journaling technique was used to capture significant information that may provide additional explanation of spoken words. Notes regarding the interviewees's professional and personal demeanor, physical gestures, tone of voice, vocal inflections, and non-verbal actions were noted. Once each interview was completed, I reviewed those reflective notes in comparison to the transcribed interview text to see if additional meaning could be interpreted. This method of comparison

allowed me to capture the actual presentation of spoken word as well as non-verbal language so that personal bias was not unintentionally transferred when readingthe transcript.

In research, it is important to consider the researcher's role while interacting with participants. One important concern was the fact that I was the interviewer andknew each participant in a professional capacity, either as a clinical preceptor or as a former student. It was very important that I remained focused on the task of interviewing and collecting field data, rather than reflecting on past discussions. By remaining focused on the interview process and capturing observational details during the interview, there wasno time for reflecting on past conversations. It was noted that this same concern could potentially arise during the data analysis phase of the study as well.

## Data Analysis

The analytical process for interpreting data was multi-faceted. Creswell (2012) explained data analysis was a process of understanding how to use the collected data to answer the researcher's questions. Qualitative research methods produce an immense amount of data even though a non-statistical approach may be used (Pope, Zeibland, & Mays, 2000). Notes made from the field, direct observations, reflective notes, and transcribed recordings of interviews resulted in many pages of textual data that were analyzed and interpreted. The process required a great deal of time and synthesis.

Interviews were conducted in an effort to explore the perceptions of graduates and preceptors regarding best practices for evaluating clinical students consistently and fairly.Understanding the perceptions of both graduates and preceptors provided insight in

each participant's understanding of the evaluation process and performance requirements. The expectations from the preceptor's perspective and the graduate's perspective revealed similarities when defining the meaning of consistent evaluation. Overall, the graduates perspectives of preceptor roles reflected the motivation and preparation for precepting.

All interviews were transcribed verbatim by someone not involved in the research study. The person transcribing the interviews signed a confidentiality statement indicating that she wouldnot divulge the names of the participants (Appendix G). Demographics were analyzed with descriptive statistics and presented in a tableindicating characteristics of the total number of participants. Each preceptor represented a different clinical facility as did each graduate. It was possible that some of the graduates may have been scored by at least one of the preceptors. However, that data were not requested from the program. Table 1 summarizes the graduate demographics while Table 2 summarizes the preceptor demographics.

Table 1

*Graduate Demographic Data*

| Graduate | Age | Gender | Job Title | Professional Certification(s) | Highest Degree Obtained | Number of Years as preceptor or graduate |
|---|---|---|---|---|---|---|
| G1 | 36 | F | Sonographer | RDCS | BS | 8 |
| G2 | 32 | F | Sonographer | RDCS | BS | 4 |
| G3 | 32 | F | Sonographer | RDMS | BS | 11 |

| | | | | | | |
|---|---|---|---|---|---|---|
| G4 | 41 | F | Sonographer | RDMS | AAS | 8 |
| G5 | 52 | F | Sonographer | RDCS | BS | 6 |

Table 2

*Preceptor Demographic Data*

| Preceptor | Age | Gender | Job Title | Professional Certification(s) | Highest Degree Obtained | Number of Years as preceptor or graduate |
|---|---|---|---|---|---|---|
| P1 | 49 | F | Sonographer | RDMS | AAS | 11 |
| P2 | 31 | F | Sonographer | RDCS | AAS | 10 |
| P3 | 48 | F | Sonographer | RDMS | BS | 7 |
| P4 | 34 | F | Sonographer | RDMS | BS | 5 |
| P5 | 48 | F | Sonographer | RDCS | AAS | 15 |

All interviews were coded for common themes. Organizing the data was kept simple as each interview was coded for key words which were imported into a matrix or table for easier visualization of themes. This method of organization was captured with

key findings listed under each coded term. Repeating terms was coded with an assigned color so that easy recognition will be possible.

Although qualitative data analysis software such as NVivo, Atlas:ti, and QDA Miner Lite was available for analyzing the collected data, it was not used in this project study. The participant sample was relatively small, a total of 10 interviewees, so data analysis software was not necessary. In addition, coding software (ie: Dedoose) was available to assist with organizing information collected during the qualitative process, but was not used (Silvers & Lewins, 2014). Color coding of common terms assisted in the quick discernment of research findings while evaluating transcripts.

The process of coding is more complex than just writing a term beside a section of text. Coding of raw data is completed by attaching words or tags to chunks of information for future assimilation and synthesis (Glaser & Laudel, 2013). The grouping of coded data allows quicker recognition of key themes as they emerge from the raw data. As the multiple codes are compressed into a few common themes, the underlying main ideas or categories surface and are compared to findings from the literature review. Caution should be taken when reducing data for coding purposes (Huberman & Miles, 1983). When data saturation is high and time is limited, the process of coding or data reduction can inadvertantly remove important data, thereby missing some key evidence prior to interpretation. Writing a definition or describing the meaning of the code word or tag may offer clarification when processing data (Welsh, 2002).

Writing ethically required that the researcher not falsify any data nor exaggerate findings to support or deny a hyposthesis. In addition, following the required processes

for ethical research practices provided credability to the research. Ethical issues could be encountered during any field or interview process. Anticipating those issues prevented them from occuring.

**Measures to Assure Accuracy and Credibility of Findings**

Credibility and consistency of qualitative research to fairness and empowerment is essential in research practices (Lincoln & Guba, 1991). All participants were treated fairly in the research process and were empowered to participate, knowing that their participation could make a positive difference in the profession. All participants were treated with equal consideration and thereby encouraged to provide honest responses during the interview.

The researcher should keep an audit trail during data collection by recording dates, times, environment, and clear notes from each interview (Carlson et al., 2009). The purpose of an audit trail is to secure additional notes should an external auditor be used, creating a sense of trustworthiness in the data collection process. During the interview process, I avoided sharing personal experiences or previous research results that could bias the participants' responses.

Each interviewee had the opportunity to review his/her transcript for accuracy, a process called member checking. At that time, the interviewees were not exposed to any interpretation of data. In the member checking process, the interviewer, interviewee, and researcher are all responsible for making sure interview transcription are accurate (Mero-Jaffe, 2011). Mero-Jaffe further suggested that the interviewee should be allowed to review the transcription of his interview, providing edits or clarification if needed. This

process ensures that the content and intended meaning of statements made during the interview are clearly and accurately transcribed.

Interviews were transcribed and the field notes recalling emotions and body language were documented. Mero-Jaffe (2011) indicated that leaving these observations out of the transcribed interview may allow misinterpretation of the data by only seeing words, not emotion. I compared the field notes with the transcribed interviews. Graduate participants were identified as G1 through G5 while preceptor participants were identified as P1 through P5. The field notes complemented the common themes initially recognized in the interview transcripts and provided additional insight to the meaning of the words spoken by matching the body language and non-verbal clues witnessed.For example, G1 became very passionate about an experience where she perceived being mistreated by the technologists because she was not in the group of techs and students who went out socially on the weekends. The graduate was not allowed to scan as much as the other students and had limited performance feedback. The facial expressions and use of hands when describing the incident supported her frustration with the situation.

The peer review process is a review of the data and interpretation by a *disinterested peer* who challenged the researcher to provide solid evidence in support of his study and interpretations (Johnson, 1987). I asked a colleague unafilliated with the health program studied to review the data and interpretation results. The peer reviewer was asked to identify common themes and offer impressions of the project study. Results of the review paralleled my initial findings. The peer review process adds credibility to

research because peers hold other peers accountable for work completed (Murphy, 1994). Transparency of data collection and interpretations yield trust in research.

By triangulating data from multiple viewpoints through interviews with graduates and clinical preceptors, the accurancy and credibility of the research was substantiated. Cross-checking information collected through various methods of data collection will help the researcher understand a certain phenomenon (Johnson, 1987). In this project study, triangulation of data collected from the interviews with graduates and clinical preceptors, along with field notes, was compared to findings from the literature review, providing additional insight into why inconsistency occurs within the clinical evaluation process.

Triangulation of data not only confirmed the validity of data collected but also captured the completeness of data evaluated from a more holistic mindset of thinking (Adami, 2005). The triangulation process is divided into five types: data, investigator, theory, method, and analysis, while data triangulation is divided into three types: time, space, and person (Denzin, 2009). Denzin suggested in the personal triangulation method that adding the perspective of many people, that the phenomenon can be more thoroughly investigated. Although there are a few types of triangulation (i.e. time, space, and personal), the personal triangulation best fit this project study because the data werecollected from several people sharing their perspective on clinical evaluation of a student's performance in a clinical setting.

Although the project study used primarily interviews and field notes to gather data, these methods were appropriate for seeking information related to the local

problem. Talking to graduates of the program and clinical preceptors responsible for evaluating students in the clinical setting provided a wealth of information about the perspectives of each group that was important in the project development. The reflective field notes were valuable as they offered nonverbal insight into the participants' responses. All participants were extremely eager to share personal experiences and reflections that may assist in understanding how inconsistencies may occur in the clinical evaluation process. To have such eager and genuine participation was inspiring for me and for those invested in the success of future students.

**Procedures for Dealing With Discrepant Cases**

In qualitative research, a discrepant case may occur when there is negative data, or contradictory evidence. Negative information may include data that does not fit into one of the identified themes when coding (Maxwell, 2012). All research has the potential for bias and inaccurate reporting and portraying data, sometimes skewing and invalidating research outcomes (Whittemore, Chase, and Mandle, 2001). The researcher should attentatively look fordiscrepant data that does not fit into any grouping and report it in the study (Creswell & Miller, 2000; Lewis, 2009). When a discrepant case is identified, the researcher should present the findings as is and let the reader make his own determination or interpretation of data according to Maxwell. I did not recognize any negative information which would lead to a discrepancy in this project study.

## Findings and Discussion

The interviews and field notes provided the descriptive data used to identify themes in this project study. Careful analysis of the transcribed interviews was compared

to the field notes in an effort to provide enhanced meaning of data related to the research questions. Researchers can present their qualitative research through a thick, narrative format, using the voice of a storyteller explaining his practice and data (Tierney & Lincoln, 1997). Findings from analysis of qualitative data are presented here in narrative format. Findings related to each research question are presented first, followed by presentation of themes identified in the data.

**Findings Related to Research Questions**

Research Question 1: How do sonography graduates and clinical preceptors describe important practices for maintaining consistency in clinical evaluation?

The first research question focused on how graduates and preceptors describe consistency in clinical evaluation means. Both graduates and preceptors responded similarly by defining evaluation consistency as the ability of the preceptor to assess a student's performance without comparison to another student and based on the level of education that the student was at during the time of evaluation. For example, G2 and G5 mentioned that they felt many of the clinical preceptors were aware of the program policies, but few enforced the rules. This opened the opportunity for some students to challenge program rules without consequence. G2 and G3 suggested that some of the preceptors would score students based on whether or not they liked them. Favoritism was discussed as a factor that also determined whether or not the students were allowed to participate in demonstrating skills and sonographic procedures. These graduates also believed that preceptors provided less feedback regarding the performance of skills.

All of the preceptors stated that they were familiar with the program policies and read the course syllabus and objectives prior to the students arriving for clinical assignments. All of the preceptors mentioned that they like to get to know the students and score based on their level of education in the program. P1 stated "I like to get to know the student and then once you kind of get that feel for how they can learn, you can adapt and you can concentrate in that particular way of learning." P3 said "I have to get to know my student first and see what works for them. Some students need a little more space than others because they get real nervous when we're looking over their shoulder."

Research Question 2: What expectations do sonography graduates and clinical preceptors describe as being the most important characteristics for ensuring consistency in clinical evaluation?

The second research question focused on attributes related to consistency in student evaluations. G1 stated that the preceptor should take his personal opinion out of the evaluation process, avoiding favoritism or personal bias. G1, G3, and G4 mentioned that the preceptors should familiarize themselves more with the program's policies and procedures as well as the comprehensive evaluation tool. Some felt that the evaluation tool was merely a quick check-off list. G1 responded "I don't know that they understood the policies and procedures for students because I'm not sure that they had the time to take and read over the policies and procedures."G3 stated "I don't think they actually read the handbook." G4 said, "I'm not sure that they all understood because I'm not sure that they all read it through. I'm not for sure that they always read through all of the

details. I think some places just needed to hurry up and put down whatever." G5 stated that "some preceptors took their role seriously while others just checked you off."

All graduates felt that the preceptor should get to know the student and his learning style first, providing timely and detailed feedback about their performance immediately after performing the skills. G4 said "Well, I think that…the people that are grading us need to know what level we are at like at all times." In comparison, the preceptors all agreed that they like to get to know the student and where the student is in the program as soon as the semester begins. P1 stated that she likes to get to know the student's learning style so that she can adapt teaching strategies to insure the best learning opportunity for each student in the clinical sitting. P3 expanded on the idea of consistency by stating that preceptors should be uniform and fair regardless of the situation or students involved, avoiding personal bias, and holding students accountable for expectations that are clearly expressed by the preceptor on the first day of clinical experiences. P4 stated "Know what kind of learners your students are by spending time with them and know their challenges."

Another interesting comment made by P1 focused on preparing the preceptor with instructional training and providing them with clearly identified objectives for teaching and assessing students. P1 stated "Perhaps training would be good so a preceptor that grades at mid-semester would grade the same as a different preceptor at the end of the semester." G2 said "I feel like maybe the clinical preceptors could probably get a little more training like a power point or handout maybe."G3 suggested "techs having an actual class at the college to teach how to grade students."

Sometimes preceptors are selected by the clinical site and some preceptors volunteer to mentor students. Volunteering to be a preceptor demonstrates to the faculty and students that the preceptor desires to counsel students regarding professional qualities and skills. Preceptors are often selected by the employer and program faculty. However, not every potential preceptor is engaged in the learning process to offer patience and understanding or has the nurturing abilities required for molding knowledgeable students. G1 and G3 mentioned that it is easy to identify those preceptors who are not interested in working with students, further straining the preceptor-student relationship in a healthcare learning environment. G3 said "Preceptors should want to teach students."

Research Question 3: How do sonography graduates and clinical preceptors describe their experiences with equity/inequity in evaluation of professionalism and clinical skills performance?

The final research question asked the participants about their perceptions related to the learning environment and expectations for clinical performance. For the preceptor, the learning environment must be conducive to providing optimal patient care in a healthcare setting with continual changes occurring in a real patient environment. Increased workload and intense situations may occur at any time, providing a sometimes stressed environment for learning. The preceptors have a variety of professional training, but professional and behavioral expectations may differ between preceptors.

Of those graduates interviewed, G5 mentioned how frustrating it is to learn many concrete skills and protocols from preceptors who do many of the tasks differently. She commented, "Most of my time was spent at two different with very different feedback in

those two sites." In addition, the characteristics that constitute professional behavior are somewhat blurred depending on personal and cultural interpretations. Preceptors acknowledged the variety of ways to complete a task with the same anticipated outcome. P2 stated that she 'individualizes the skill at hand and meets that student's needs." P3 said she "explains the skill, shows the student how to perform it, and offers feedback while the student performs." In contrast, one of the graduates, G5, stated that she had "limited scan time with little or no feedback while performing the skill." Meanwhile, P4 indicated that reading the program's course syllabus and evaluation tool was extremely critical in understanding the program's expectations for performance and assisted in the alignment of teaching strategies to expected outcomes. The majority of preceptors interviewed agreed that clear performance objectives and enforcement of program policies were key components in equitable assessment of students.

On the other hand, the graduates shared interesting perceptions about inequitable assessment and treatment of fellow students when they were in the program. Graduates agreed that favoritism and personal bias played a huge role in the evaluation process of most students. G2 suggested that "not every student followed the rules and some preceptors did not enforce the rules." G3 confirmed that there was notable favoritism by some of the preceptors by "not providing equal scan time among students and grading less favorably if they did not like you." G4 claimed that "older preceptors did not communicate well and were set in their ways of scanning." Most of the graduates felt if the preceptor did not like a student; the evaluation would be negatively impacted, even if they felt the preceptor was well-informed and understood the evaluation process. G3

shared a story where she performed the same procedure at two different clinical sites. Although the graduate felt the performance was performed with equitable skills at both sites, one preceptor scored the performance more poorly (one letter grade) than the other. When asked why the graduate felt this way, she stated that "she was not part of the clique that socialized after clinical hours and on weekend."

**Common Themes Identified**

Analysis of interview data resulted in the emergence of four common themes: clinical evaluations are sometimes biased with favoritism; preceptors may be aware of program policies but not enforce them; consistency is defined similarly by both preceptors and graduates; and immediate feedback during skill performance is important for student success. Field notes provided confirmation of how passionate the interviewees were regarding their responses.

**Consistency**

Consistency was defined similarly by both preceptors and graduates. Both graduates and preceptors understood the concept of consistency. Most preceptors defined consistency as a repeated action when grading multiple students equally using the evaluation criteria as defined by the program. The graduates understood consistency as grading and treating students fairly or the same. The overall consensus was that preceptors should get to know the student, avoid bias or favoritism, and provide immediate feedback during the student's skills performance help to ensure consistency in clinical evaluation.

Inconsistency in grading and fairness of evaluation was mentioned by the majority of graduates interviewed. This theme is also addressed in literature. In a study where 600 college students were asked to determine whether their perception of grading fairness was best suited with curved exam scores or teaching practices that better prepared the student for the exam. Regression analysis indicated that the students preferred to be better prepared with the tested content rather than having an inflated final grade (Gordon & Fay, 2010). In a quantitative study Millet (2010) reviewed grade variations from data stored for a local state college system. Millet note the grading profiles of several instructors and compared them to their colleagues. Some extreme variations of grading inconsistencies were noted in the data. Millet evaluated a Grade Lift reporting system so faculty would be aware of their inconsistencies. Although the Grade Lift feedback was available for faculty, those who graded less strictly continued to grade less strictly and those who graded more firmly continued to grade firmly. I wondered if preceptors would also follow a similar biased grade inflation pattern when evaluating clinical students who perform in an adult learning environment especially in the case where G3 commented about receiving a letter grade less at one site compared to another.

Several of the graduates and preceptors identified a problem with preceptor biases when evaluating clinical students. P3 stated that "fairness was essential when evaluating students as the students often work with many preceptors so all need to be fair and consistent when grading." P4 said 'It's hard not to compare students, but one should try not to compare them." P5 suggested that "preceptors not get personally involved with

their students as it causes difficulty when evaluating objectively." G2 stated that "although a preceptor may out of their way to be a consistent evaluator, there is still some form of favoritism, whether by grade or by allowing the student scan time." G1 stated that "preceptors should take their opinions out of the evaluation process." Consistency when evaluating students provides a strong foundation for adult learners who learn through performing skills (Knowles, Holton, & Swanson, 2015).

**Feedback for Students**

Immediate feedback during skill performance is important for student success. All graduates agreed that immediate feedback while performing was most helpful. G1 said "Waiting until the end of the semester when we got the evaluation was too late to help us." G3 stated "I need immediate feedback while I'm scanning and added that it is the student's responsibility to ask for feedback too." Many graduates suggested that preceptors were extremely busy as an employee that their time was limited for mentoring students. Other graduates indicated that some preceptors did not demonstrate an interest in reading the program material each semester as they already knew what to expect. One graduate shared that a preceptor said once he received his continuing education credits for helping students that he had no desire to further help students. Nonetheless, most graduates agreed that feedback was most beneficial while skill is being performed. Meanwhile, preceptors interviewed mentioned that student resistance to feedback was sometimes an issue. Fear of upsetting a student with a poor evaluation may have provided another explanation for inconsistency when evaluating students. Providing

immediate feedback to adult learners as they perform skills is often more effective than feedback provided later (Knowles et al., 2015).

**Favoritism of Students**

Clinical evaluations are sometimes biased with favoritism. All five graduates mentioned that "clinical preceptors are sometimes biased when evaluating clinical students." G1 said that "if the tech liked you, then you would get a good evaluation." Even P1 indicated that when she was a student, she "saw favoritism of students." Graduates discussed varying levels of favoritism and how that affected student scoring on the clinical evaluations. G1 stated that "there was a different level of expectations for scanning depending on where the student was in the program and if the preceptor liked you." G3 said "if the preceptors liked you, they would grade you better than those they didn't like." I found it surprising that both preceptors and graduates defined consistency very similarly. Unintentional biases creep into the evaluation process no matter how cautious an instructor is during the assessment (Hardre, 2014). Adult learners are quick to identify favoritism in the learning environment (Mann-Salinas, 2014).

**Varying Policy Enforcement**

Preceptors may be aware of program policies but do not always enforce them. G1, G3, and G4 stated that "they did not believe that the techs even read the handbook." G4 stated that "the techs are too busy to read all the paperwork that the program sends." At least two of the preceptors, P4 and P5, interviewed admitted that they "glanced over the program paperwork for any changes." Various reasons existed for why preceptors did

not read all of the material in detail and students were very aware of which clinical sites enforced the program policies.

In summary, the results of the interviews coupled with the field notes representing emotions during the interview demonstrated four themes as experienced by graduates and preceptors in the sonography program. Active learning involves the engagement of learners who are focused on learning through experiential experiences in an attempt to demonstrate learned content by performing skills in a current and applicable situation. Knowles's theory of active learning is well-demonstrated in the program studied for this project (Knowles et al., 2015). Because the graduates were adult learners who were invested in their education, they actively participated in clinical experiences with the intent of learning how to successfully perform new skills. Their self-motivation and desire to learn fueled their responsibility to successfully achieve specific learning outcomes. McGrath (2009) indicated that adult learning is both pedagogy and andragogy and that many learn by psychomotor methods. The graduates in the sonography program learned didactic concepts through lecture (pedagogy) and skills through lab demonstrations and clinical experiences (andragogy). Creating relative learning experiences with real-life scenarios strengthened their overall performance of learned sonographic procedures.

**Field Observations**

Professional characteristics related to the learning and evaluation processes were perceived differently by those evaluating and those who were evaluated. Although some responses were very similar to others, both the graduates' and preceptors' perceptions

were very real to them and evidenced by the field notes documented during the interview processes. For example, when an interviewee was passionate about his response to an interview question, he used his hands more and the facial expression was more serious. When graduates were describing negative encounters with preceptors, they frowned more and the tone of voice became more escalated. When positive experiences were shared, the interviewees' facial expressions appeared more pleasant with a relaxed seating posture, and graduates were often appreciative for preceptors who dedicated their time and efforts to ensure learning occurred.

## Limitations

With any research, it is critical that potential biases and limitations be revealed to the reader (Merriam & Tisdell, 2016). Internal validity may be compromised if the researcher approaches the study with preconceived notions of findings. External validity may be compromised if the tools used are not reliable or if the selection process is erred by bias or too inclusive (Lodico et al., 2010). I remained unbiased during the collection and interpretation of data.

The participant pool for this project study was essential in order to get specific data from graduates who have completed the sonography program and preceptors who facilitated student learning experiences in the clinical setting. Since interview transcripts were approved by the interviewee via member checking, there is no anticipation that researcher bias occurred.

Unexpected issues that may occur and cost valuable research time, may include improper audio-recording equipment, access to interviewees, permission and signing of

confidential agreements to interview, time associated for interviewing all participants, transcribing interviews, and member checking activities. I was fortunate that the digital recorder worked without error and that the participants who agreed to participate were very engaged and passionate about the topic. I did not have any difficulty with communicating with the potential applicants and received permission from the college and participants without incidence. The transcriptionist did not have any difficulty or time delays. Scheduling the interviews took a great deal longer than anticipated as I had two appointments to reschedule. Participants were happy to meet with me at a site convenient for both. I traveled to all but two participants who met me on campus. Member checking activities did not take more than a week and several of the participants were entertained by their voice in the recordings.

Another limitation of the project study was the small sampling of graduates and preceptors for interviews and the fact that only one sonography program was studied. The sample size should be appropriate to the research methods and type of population (Ritchie, Lewis, Nicholls, & Ormston, 2014). A homogenous population may not require a large sampling while a heterogenous population may require a greater volume of responses. Because the program was specific and the graduates were of a small population, approximately 100, the sample size was smaller. Also, interviewing participants can be very intensive in terms of time and resources therefore limiting the sample size to a more manageable number of participants. Unfortunately, using a smaller, inclusive group of participants does not provide an opportunity for generalization of findings to other entities (Tsang, 2013).

## Summary

In section two of the proposal, the research methodology and data collection and analysis processes were discussed. Data were collected from audio-recorded interviews with five graduates and five clinical preceptors. Field notes were written in a journal in an effort to capture any non-verbal responses visualized during the interviews. I analyzed the collected data using a coding method for identifying specific reoccurring themes. Color coded words were noted along the margins of the transcripts as an attempt to recognize and organize common thoughts.

Findings support the need for a formal 3-day training workshop with interactive activities to better prepare clinical preceptors for their critical and interactive role in training and mentoring sonography students in an attempt to improve consistency in scoring a student's clinical performance and professional growth. For example, several of the preceptors and graduates interviewed suggested that some form of training be provided to all clinical preceptors in order to provide more uniformity between clinical sites. The majority of the graduates expressed concerns about inequity among clinical sites due to preceptors who failed to enforce program policies and the lack of immediate feedback when performing skills. On the otherhand, at least two preceptors noted that they had witnessed favoritism among clinical preceptors and felt as though the student evaluations were inflated.

In section 3, the training workshop created as a result of this research is presented. An overview of the workshop, rationale, learning objectives, and predicted outcomes are

discussed. The design and implementation of the workshop will be provided along with a plan for evaluating the training workshop.

Section 3: The Project

## Introduction

Section three includes a description of the project, its goals and rationale, the project genre, and the project outcomes and implications. A literature review of the common trends identified in the project study is also presented. The results of the project study suggested that a formal training workshop be offered to all clinical preceptors in an effort to improve consistency in scoring a student's clinical performance and professional growth.

### Overview of the Project

A comprehensive training workshop was created in an attempt to provide clear definition of the preceptor's role when teaching and evaluating sonography students in a clinical setting. The goal of the training program was to define and address the role of the preceptor, provide teaching strategies for mentoring students, discuss learning styles, and evaluation processes for professional growth and performance relative to learned concepts taught in the classroom and scanning lab. Lecture, group sessions, and interactive learning principles will be used to prepare clinical preceptors for their role as a mentor and evaluator. Resources for clinical preceptors will also be provided for independent learning and reference as needed.

The anticipated participants are clinical preceptors who are self-directed and motivated to become better clinical preceptors. Knowles's theory of adult learning parallels the training workshop's instructional design, as a variety of teaching methods will be used to help the adult learners gain knowledge and develop clinical preceptorship

skills in an experential environment. Visual, didatic, and interactive activities will allow the participants to experience methods to teach clinical students with various learning styles. Some of the resources will be available post training for self-directed review for enhanced learning.

**Description and Goals**

The project genre, a professional development and training workshop for clinical preceptors, was developed due to the findings from this project study involving a two year community college sonography program with an identified need to provide more consistency in the clinical evaluation process. The project study was focused on exploring the perceptions of clinical preceptors and graduates about the clinical evaluation process. Understanding perceptions of both graduates and preceptors helped identify needs to guide development of a program to train preceptors and foster consistency in the evaluation of sonography students at all clinical sites affiliated with the program.

After reviewing the transcripts of all interviews and analyzing the data, common themes were identified that suggested a formal training workshop would be helpful in preparing clinical preceptors for their role of mentoring sonography students. For example, at least 4 of the 5 graduates interviewed indicated that most preceptors were aware of the majority of program rules but did not enforce those rules for all students. At least 80% of the graduates and preceptors interviewed stated that they had witnessed some form of bias or favoritism occurring between preceptors and students. Although all graduates and preceptors similarly defined consistency in scoring students on

performance skills, at least two preceptors said that additional information would be helpful during the training sessions. Suggestions included a review of program policies, clarification of evaluation criteria, and ideas for dealing with common student situations. As a result, a three-day training program was developed to provide resources and training for all sonographers who are interested in becoming a clinical preceptor for students enrolled in the sonography program.

Because all of the students in the sonography program are adult learners, Knowles's theoretical framework for adult learning was studied, specifically andragogy. Each learner has his own style of learning which best suits his ability to process and synthesis information learned. The participants will also complete an online learning style inventory so they have a better understanding of how to identify a student's learning style. The workshop participants will learn by different styles and will experience their education via multiple teaching strategies including visual webinars, interactive activities, and lecture followed by debriefing sessions. Knowles, Holton, and Swanson (2015) reviewed the common concepts that adult learners share as they learn in a relaxed and self-motivated environment. Andragogical concepts include the learners need to learn, their self-directed motivation to learn, their reliance on past experiences, and their problem-centered mindset. In this study, participants have a need to learn how to be an effective, consistent preceptor and attendants will be motivated to be a more informed student mentor during clinical experiences. Relying on their past experiences as a sonographer, the participants will be able to apply their problem-centered critical thinking skills when participating in the group activities.

The target audience for the training workshop would include any sonographer approved by the clinical site and college to be a clinical preceptor for sonography students. Learning outcomes include:

- Define the role of the clinical preceptor
- Demonstrate the ability to identify learning styles
- Discuss teaching strategies and resources for clinical instructorship
- Discuss the clinical evaluation tool and expectations for performance
- Discuss ideas for providing consistency in evaluation
- Discuss student behavior scenarios and best practices

The training program would require face-to-face attendance on campus for three days. Each day would address specific concepts to assist the preceptor in developing instructional and evaluation skills. The facilitator for the program will be the clinical coordinator of the sonography program. A combination of power point, video, role-play, and group discussions will provide the basis for teaching best practices related to clinical instructorship. The anticipated timeline for implementation would be prior to the next semester and offered at the beginning of the fall semester annually for new preceptors. After the first offering, the training curriculum and deliverables will be evaluated by the participants for enhancement ideas. In addition, feedback from the students in the program may provide valuable insight as to whether the preceptor training had produced noticeable results in the clinical setting.

After researching various methods for designing course content, I chose to follow the constructionist conceptual framework of development, implement, and evaluate as opposed to the traditional objectivist design of lecture. I wanted the training workshop to be a conversation of ideas rather than a list of things to remember from a master's point of view to a participant. Due to the variety of experiential experiences that the audience had, sharing those ideas from various perspectives would have been a better way to discuss the key concepts learned from the project research. In order to develop the training workshop, I reviewed various instructional strategies and decided that a variety of teaching methods may prove most engaging for the audience. Facilitating a balance of discussion, webinars, and group activities seemed most appropriate for attracting attention and providing a deeper understanding of content through profound discussion of the participants' previous experiences working with students in a clinical environment. The ability to provide online resources for best practices identified for clinical preceptors seemed to be valuable as the participants could further explore additional resources as a way to continually self-improve.

Duffy and Jonassen (2013) believed that constructivism for instructional design was based on multiple perspectives of an event or idea. They indicated that instructional designers must be specialists in design covering the cognitive, psychomotor, and affective domains but must also work with subject matter experts who provide content in traditional methods. They felt one of the biggest issues was the facilitator not following the instructional design closely and interjecting their own thoughts into the instruction of content. Delivery of content must be innovational when meeting the needs of the

audience, providing various instructional methods to accommodate various learning styles.

The first step was to design the training workshop with the target audience in mind. Since the participants would be clinical preceptors affiliated with the sonography program, it was assumed that the current preceptors were aware of the program policies and student evaluation methods. However, the interviews realized the fact that many of the preceptors knew the content, but failed to enforce program policies and evaluated students with personal bias. To accommodate that thought and coordinate the instruction with new clinical preceptors, I approached the concepts with teaching strategies that would integrate the experienced preceptors with the rookie preceptors in an effort that reviewing the policies would alert the seasoned preceptors to the need for enforcement of rules to provide continuity among all clinical sites.

Once the instructional framework was identified, I searched for a variety of resources that would prove entertaining and cognitive. Since the workshop would be three days long, I mixed a variety of teaching methods that involved similar topics. On the first day, I will give a pretest to see what the participants knew and how they reacted to written scenarios (Appendix H). In an effort to explain the concept that all students learn differently, I will have the participants complete an online learning style inventory to identify their learning styles. These results should lead to enlightening discussions about which teaching strategies work best for them and which teaching strategies work best for their students in a clinical environment.

Gaberson, Oermann, and Shellenbarger (2015) discussed multiple ideas about crafting clinical learning assignments and preparing for clinical simulations. I found their book filled with comprehensive ideas for preparing for clinical activities and student evaluation. Developing inherent critical thinking skills, clinical reasoning, and decision making were discussed extensively. These discussions led to ideas to incorporate into the training workshop so that the preceptors experienced the value of reasoning and decision making based on the program's expected outcomes.

The method of giving a pretest and posttest proved to be a valid way to let the preceptors realize key components of their role as clinical preceptors and evaluators. Davies, Douglas, and Ball (2013) discussed the instructional method of flipping the classroom and instructing with a pretest and posttest method. This instructional approach allowed the students to identify what they did and did not know as an effort to motivate learning. As the student is responsible for his learning, the motivation of knowing what you need to learn from the course proved enlightening. I used pretests and posttests to allow the preceptors to acknowledge what they thought they knew and what they actually needed to learn. I did not care how they scored on the initial test, but found the participants were more engaged in understanding why they missed questions on the pretest. I valued learning how much each participant improved (based on the posttest scores) as a result of the training.

## Rationale

The goal of the project study was to better understand why students perceived that there was inconsistency in the evaluation process of student performance. Currently, the

program does not offer a training process for clinical preceptors identified within the clinical sites. Based on this project study's findings, I believe the preceptor training workshop will better prepare clinical preceptors for their role of teaching and evaluating students. Initially, when the faculty discussed their problem of lack of consistency in clinical evaluation of students, they mentioned that most preceptors in their clinical affiliates were not graduates of their program and were only familiar with the program's policies through documents and conversation with faculty. Therefore, preceptors who were trained through other programs perceived grading differently. It was noted that the evaluation tool used to evaluate all students was detailed and included many professional and performance qualities to be scored. Students were evaluated on their motivation to learn, their behavior, patient care skills, attendance, and work ethic. Although each attribute was defined on the evaluation tool, all of those characteristics are graded through the subjective perceptions of different clinical preceptors. This part of the evaluation counted for 30% of the total evaluation score.

The second half of the student evaluation detailed the required scanning skills for performing sonographic procedures. This section, which counted for 70% of the final score, was a little more objective with each skill defined by a standardized professional protocol. However, different preceptors scanned with their own level of expertise and preciseness and did not score a student as critically as another preceptor. Again, perceptions and interpretations of adequacy varied with each individual.

By conducting the interviews, I was able to better understand the disconnection in the student-preceptor relationship. To best address these concerns, a training workshop

for all preceptors was created. Implementation would occur at the beginning of the next semester and all preceptors would be required to review the power point on clinical preceptorship. The workshop would provide a more cohesive learning environment in the clinical setting where faculty was not in attendance on a daily basis.

Findings presented in section 2 included the following common topics which will be addressed in the training workshop: definition of clinical precepting, professionalism, effective communication, evaluation of students, avoiding bias or favoritism, program policies and how to enforce them, effective ways for providing performance feedback, and best practices for instructing students in a clinical environment. Completion of the training workshop will be required for all preceptors prior to them instructing or evaluating a student.

## Literature Review

After identifying the common themes from the data, I did additional research to find literature related to those themes that could guide development of the project. I used the Walden Library to access the Education Research Complete, ERIC, Academic Search Complete, and PsycINFO databases for current literature. Although many key words were used, the most helpful search topics included: how to design effective training for preceptors, teaching strategies for clinical students, how to create an andragogical environment for adult learners, and how to design professional development workshops.

Since the training workshop will include specific issues identified during the findings and analysis, I wanted to provide resources that discussed those topics and why

they were integrated into the training workshop. After discussion of these topics, I will discuss the literature related to designing the actual training workshop.

McIver, Fitzsimmons, and Flanagan (2016) cautioned about making decisions for teaching resources based on convenience and comfort. They stressed that the designer should explore various options and media for presenting content reflective of current and best practices. Moore (2013) stated that a great deal of thought should go into selecting resources that will enable the anticipated outcomes to be accomplished. In this section, I will present how the training workshop was designed to cover key concepts for preparing effective clinical preceptors. Resources for instruction were evaluated for core content and opportunity for experiential learning.

**Teaching Ethics and Professionalism with Consistency**

Clinical preceptors role model professional and ethical behaviors when mentoring clinical students. Understanding and enforcing program and departmental rules are an essential part of teaching professionalism and ethics. Consistency in upholding program policies allows students to understand the professional expectations required of healthcare providers. Zhang, Fike, and DeJesus (2015) presented a quantitative study conducted between two colleges evaluating which instructor characteristics were most important. The second highest rated quality was ‘grades fairly’ and ranked just under ‘knowledgeable’. This study reflected students’ perceptions about consistency in evaluation. In contrast to a focus on student perceptions, Tierney, Simon, and Charland (2011) conducted a qualitative study that evaluated how teachers felt about grading and long-term consequences. Findings identified many variations in teacher perspectives as

to what was fairness in grading. The researcher concluded that to better understand the necessary guidelines to grading; teachers needed a review of the essential guidelines for accurately reflecting a student's ability. Discussion about grading rubrics for assignments seemed to be effective in grading a student's assignment. Teaching strategies and evaluation practices were included in the training workshop. Ideas will be shared during group discussion activities and debriefing sessions.

Jung and Guskey (2010) presented a five-step model for fair grading practices, especially for exceptional learners. They suggested that each student, especially those with disabilities, have an individualized learning plan. By comparison, they indicated that students should be graded according to their grade level and course expectations. I related this article to the college setting that I studied because each student's performance abilities varied based on the amount of precepted scan time and where they were in the two-year program. Several of the graduates and preceptors interviewed stressed the importance of the preceptor getting to know the student and realizing which semester the student was in, identifying their skill level. This suggestion proved to be a major topic and will be discussed in the discussion groups and webinars selected for the training workshop.

Franklin, Vesely, White, Mantie-Kozlowshi, and Franklin (2014) evaluated the perceptions of audiology students against preceptor performance by conducting a qualitative study. Findings revealed that the students felt that their preceptors were ethical and followed the guidelines set forth by the academic faculty. The study also noted that the students felt that teaching professionalism and ethics was the responsibility of the

faculty, not preceptors. This is a valid point to discuss in the training workshop as the program faculty spends a great deal of time teaching ethics and professional, attributes that should be role modeled by the preceptors in the clinical setting. Preceptors will learn how to simulate those same qualities in the clinical setting in order to provide more cohesive instruction of professional behaviors.

Knight, Allen, and Mitchell (2012) presented a paper expanding on the problems that occur when students question differences in how faculty evaluates them. In an attempt to avoid student misconceptions about grading inconsistencies that exist among instructors in the same department, Knight et al. suggested that grading rubrics be designed to reduce variances in grading. Effective communication skills will be presented on the second day of the training workshop in an effort to avoid misconceptions about grading. Clarification will be made in how to avoid inconsistencies and miscommunication when evaluating a student in the clinical setting.

McMillan (2013) edited a book on classroom assessment which indicated that fairness varies in theory and practice. He also noted that due to varying expectations, fairness in grading was somewhat fluid. Fairness in grading can be threatened when there is not a concrete process or rubric for scoring. It is also essential that those grading equally understand the grading sequence and scoring process. I associated these findings with my project study as the desire to develop preceptor training so that preceptors would better understand the program's policies and expectations. On the third day of the training workshop, the program policies and clinical evaluation tool will be discussed in

detail. A webinar for clinical preceptors will provide additional detail and best practices for assessing competency and performance of student skills.

**Using Evaluation Tools**

Isaacs, Zera, Herbert, Coombs, and Smith (2013) studied the relationship between summative and formative assessments. Although both methods may be used to evaluate a student's performance and progression or growth, the criteria for assessing a student's ability and cognitive knowledge may be assessed using different evaluation tools. The formative assessment may include actual examinations testing cognitive knowledge while the summative assessment may be evidence by an observation of performance. During the training workshop, the evaluation tool will be discussed; incorporating the cognitive, psychomotor, and affective aspects of a student's learning cycle and growth.

**Personal Bias and Favoritism**

Favoritism to certain students and personality conflicts were another huge concern identified in my research. Most graduates and preceptors felt that getting to know the student and where the student was in the program was critical to grading fairly. Many agreed that keeping the personal biases out of the student-preceptor relationship was equally important. Vandermeulen (2011) described multiple examples of how a teacher-student relationship could be affected by personalities and perceptions of classmates. Although his book reflected on creative writing, his scenarios and explanations were applicable to my project study's discussion. Getting to know your student and his learning style are critical when precepting a student in the clinical setting. Keeping the student-preceptor relationship professional avoids personal biases that may creep in if the

student and preceptor are friends socially. Classmates recognized favoritism inside and outside of the classroom setting. During the preceptor interviews, one preceptor commented that she had witnessed favoritism in the clinical setting.

Chory-Assad and Paulsel (2004) presented a quantitative study comparing the student perceptions of fairness with student resistance and hostility. The findings determined that the perceptions of fairness and justice did not predict student aggression or resistance although fairness in grading was preferred by students as a whole. In another study by Chordy-Assad (2009), she investigated the correlation between students' perceptions of grading procedures with student motivation and learning. In this quantitative study, Chordy-Assad documented that student perception of grading fairness was directly related to student motivation and the desire to learn. The program's evaluation tool includes a section on motivation and initiative that preceptors score as exceeding expectations, satisfactory, needs improvement, or unsatisfactory.

Most discussions with the interviewees centered on personal injustices in grading or evaluation. However, one graduate mentioned a situation where another student was treated unfairly. Hegtvedt, Johnston, Ganem, Waldron, and Brody (2009) discussed the perceptions of students who witnessed classmates being evaluated or treated unfairly. In this qualitative study, the researcher interviewed participants and used focus groups to evaluate procedural injustices witnessed by other students. Findings revealed that another person usually seeks justice for those they feel are mistreated. One of the graduates interviewed witnessed the injustice of another student while in the program. However, she did not talk with the preceptor or faculty about the incident.

Another aspect of student perceptions of unfair grading may spill over into the faculty evaluations. Tata (2010) conducted a scenario-based experimental study that compared grading practices of faculty with the students' evaluations of faculty members. The data revealed that students who perceived that their assessments were unfairly scored often scored the faculty evaluations lower. Conversely, those students who felt they were graded fairly did not comment accordingly with positive comments. It was noted that students evaluate each clinical site at the end of their clinical rotation. The information is used to evaluate the efficacy of the learning environment at that site.

Burkholder (2015) presented a paper discussing the argument between bias in grading and curving final grades or dropping the lowest grade. Each style of grading is determined by the instructor or department. Burkholder disputed the previous study by Close that such practices were forbidden if consistency was to be ensured. During the interviews, it was revealed that students may select the easiest patient to demonstrate skills on. In addition, some students and preceptors would discard poor grades and only submit the highest scores for final course grades. This grade inflation supports inconsistency in overall student evaluations. For that reason, the explanation of program evaluation tools will be emphasized on the third day of the workshop.

MacLeod and Urquiola (2012) described the results of a study that tied overall grading practices to the college's reputation as a viable institution of learning. High grades did not always match student outcomes and abilities. An investigation revealed grading practices that falsely inflated final grades. Once that reputation is exposed, the credibility of the institution becomes marred. Grade inflations and inconsistency in

scoring students presented a potential problem for the program as inflated grades reflect poorly on the faculty and the program's integrity. It was evident when a student's lab performance did not match his outstanding clinical evaluation. It was noted that the faculty mentioned that clinical evaluations did not always match lab performances witnessed by the program faculty. The workshop will stress how important it is for preceptors to grade honestly and provide additional feedback that would enhance the student's performance.

**Grading Rubrics**

The training workshop will present discussion about grading rubrics and how they provide more consistent evaluation. A selection of literature presented evidence that grading rubrics can provide more consistent grading among a variety of evaluators. Seidel and Tanner (2013) suggested that grading rubrics assist the instructor in avoiding potential student resistance in a learning environment with various teaching strategies as a rubric requires the same from each student. Allen and Tanner (2006) presented a study about rubric design and offered critical thinking concerns about the development of a rubric and how it assures that the instructor and teacher both have guidelines for grading an assignment. Grading rubrics and evaluation tools will be discussed during the training workshop, with emphasis on the clinical evaluation tool.

Zafrir and Nissim (2011) developed a practice model for clinical nurses who also precepted students. They felt that the preceptors needed a rubric for facilitating clinical experiences and grading students on their performance. Objective student progress notes were recorded daily and used in the evaluation process of students during their

summative evaluations at the end of the grading period. Her model guided preceptors through a detailed list of expectations for student performance, proving to be helpful to preceptors and providing some consistency in grading. Two of the interviewed preceptors stated that they talk directly with the student on the first clinical day and explain the expectations of the department and how they correlate with the program policies and expected student outcomes. One of the graduates interviewed said that she was left in the department without clear guidance to figure out what to do and if her performance was satisfactory. How to role model professional characteristics and how to be an effective clinical preceptor will be discussed during the second day of the training workshop.

**Student Feedback**

Another theme that presented during my data analysis was the need for immediate feedback for students performing specific tasks. Graduates indicated that immediate feedback was more helpful than summative feedback at the end of the grading period. Walvoord and Anderson (2010) stated that timely feedback provided students with motivation to improve immediately. When enhancement ideas are given to students as they are performing or immediately after performing, the student can instantly apply those suggestions for an enhanced learning process, yielding improved skills for future tasks. At least four of the graduates interviewed commented about the importance of receiving immediate feedback when performing skills. One graduate mentioned that providing feedback at the end of the semester did not provide time for improvement. This concept will be discussed on day 2 of the training workshop via a webinar geared

toward providing effective feedback for improving clinical skills. The webinar will provide participants with a better understanding of the feedback process.

Guskey (2011) stated that poor grades or negative feedback encourage student to try harder, motivating them to a new level of learning in hopes to be successful. By holding the student accountable for his performance, a teacher can relay pertinent information to the student so they can improve in a timely fashion. Withholding feedback may allow the student to assume they are performing in an acceptable manner.

In summary, the literature review provided better understanding for designing and implementing the training workshop, as well as evidence for selection of workshop resources. Search topics included how to design effective training for preceptors, how to use various teaching strategies for clinical training, how to create an effective learning environment for adult learners, and how to design professional development workshops that presented best practices for participants.

## Development of the Workshop

Much thought went into the development of the training workshop and the selection of resources, webinars, and lecture slides. Each resource was selected based on the themes identified in the project study. A variety of instructional methods was selected to appeal to the various learning styles of the participants. The lecture slides were designed to define the role of the clinical preceptor and identify key attributes of an effective preceptor. Slides prepared for the third day of the workshop focus on program expectations. Webinars were selected from subject matter experts who presented for national sonography conferences. Group activities were designed by me so that

participants can role play and practice student-preceptor situations that may occur during their preceptorship (Appendix J). Scenarios were created reflecting some of the situations presented in the interview process. In the attempt to help participants understand what a learning style is and which teaching methods are most effective for those learning styles, each participant will be required to complete an online learning styles inventory (Appendix I).

On the first day of the workshop, all participants will complete a pretest to evaluate current knowledge of clinical preceptor skills. On the last day of the workshop, the participants will complete a posttest, which is the same as the pretest. The pretest and posttest was designed by me so the participants can realize how much they learned during the workshop. The questions parallel the content presented during the workshop and professional best practices. Six weeks after the training workshop, all participants will be requested to complete an online post-completion evaluation to identify if the content learned impacted their current work as a clinical preceptor (Appendix L).

Volberding and Richardson (2015) suggested that preceptors receive on-going and dedicated training from the program faculty. Mann-Salinas (2014) provided evidence that a preceptor training program proved to be an effective way of training nurses to train students in the clinical environment. Chang, Lin, Chen, Kang, and Chang (2015) presented a mixed method study that revealed nurse preceptors cited effective communication skills as the most important course in their preceptor training program.

Deneckere et al. (2013) studied a group of interprofessional healthcare workers whose goal was to improve collaborative efforts between different teams in the healthcare

setting. Training sessions were used to improve teamwork efforts and provide continuity in patient care throughout the patient's hospital stay. Findings supported the benefits of interdepartmental training in creating high-performance teams who improved the overall care processes within the hospital. Fink (2013a) presented multiple ways to train instructors how to engage the students to improve overall retention and learned behavior. He focused on developing teaching through integrated course design; engaging students in experiential exercises and reflective dialogue during debriefing sessions about what was learned due to the experience. I used many of his ideas in preparing this project's deliverable as the clinical preceptor-student relationship is based on communication during experiential learning. Another study which paralleled my need for preceptor training was the Kang, Chiu, Lin, and Chang (2016) study. A simple conceptual framework of development, implementation, and evaluation was used to design a training program for nurse preceptors using mostly films and situational discussion. Overall the study found that situational training improved the preceptors' understanding of the preceptor role and preceptor-student relationships. I found that the scenario discussions were very helpful in sharing ideas that worked or did not work for clinical preceptors in situations where they had to deal with difficult students.

In another article authored by Fink (2013b), he discussed faculty development and self-transformation of those participating in training. He presented a discussion on the importance of regularly assessing faculty to ensure that professional development improved their delivery and teaching methods. Faculty may become stagnant after years of teaching. Teaching the teachers how to incorporate innovative teaching strategies in

the classroom or training resulted in the transformation of the teacher, who relayed that empowerment to training participants. Once the training was developed and designed, implementation of the training had to be determined. The financial needs, physical resources, existing supports, and potential problems had to be discerned.

## Implementation

### Needed Resources

Resources needed for the training sessions had to be evaluated to determine potential overall cost of offering the training workshop. Phillips (2012) described ideas for determining whether the cost of the training would yield a positive return on the investment. He suggested that the instructional designer evaluate all possibilities of current resources that could be used in the training workshop. Once current resources are identified, then costs can be better determined. Participants in the training workshop will not be charged a fee to attend. Honorariums or stipends will not be given to the facilitator, as the facilitator will be a program faculty member. Printing costs will be assumed by the sonography program. A classroom on campus will be used to facilitate the training workshop. The classroom is equipped with internet capability and computers as the webinars and the learning style inventory are available through online resources.

### Existing Supports

I was very fortunate to have the support of the college administration and program faculty to conduct the training workshop. Johnson (2016) discussed the benefits of using current faculty as mentors for colleagues. He stated that “deliberate and thoughtful mentoring was one of the most important roles for higher education faculty members”

(p. 3). I decided that using program faculty to discuss program policies and program needs for mentoring would be the best option for the training workshop. The program provides resources for copying and classroom facilities for discussion groups and debriefing sessions. The webinars will be provided as part of the educational resources available through the Society of Diagnostic Medical Sonographers. Clinical sites will allow time off for clinical preceptors to attend the training workshop.

**Potential Barriers**

The only potential barrier identified was the fact that all preceptors may not be able to attend the three-day training workshop due to workload and personnel schedules. For that reason, the training workshop would be offered on multiple occasions until all current preceptors are trained. After the initial training sessions, the training workshop would be offered once per semester so that new preceptors could be recruited and trained. In addition, the preceptors would arrange time off to attend the workshop or the clinical site may allow them to attend as part of their paid work schedule.

**Proposal for Implementation**

When planning a training program, it is essential for the designers and implementers, if different, to communicate (Brown and Green, 2016). The instructional designers create activities and gather resources that will provide adequate coverage of the chosen topic. Those who implement the training should understand the objectives and expected outcomes that the designers intend to accomplish. Training the facilitators and trainers provides continuity in thought from the design process to the delivered product.

During the process of training the facilitators, creating a timeline with clear objectives provides a guide for progression and consistency. The following timeline provides that continuity for the overall preceptor training workshop created as a result of this project study.

Table 3

*Project Timeline*

| Task | Time | Stakeholders |
|---|---|---|
| Needs Assessment | 6 weeks prior | Program Planner<br>Facilitator<br>Potential Participants |
| Recruit Internal Facilitator | 4 weeks prior | Program Planner<br>Internal Facilitator |
| Select and Obtain Teaching Resources | 4 weeks prior | Program Planner<br>Internal Facilitator |
| Training the Facilitator | 3 weeks prior | Program Planner<br>Internal Facilitator |
| Preceptor Training Workshop | 7 hours/3days | Program Planner<br>Facilitator<br>Participants |
| Informal Reflection | Informal Ongoing/3days | Program Planner<br>Facilitator<br>Participants |
| Formative Evaluation | Internal Ongoing/3days | Program Planner<br>Facilitator<br>Participants |
| Summative Evaluation | 6 weeks after workshop | Program Planner<br>Participants |

**Roles and Responsibilities**

The key participants in this training workshop included the program planner, the internal facilitator, and the participants. The program planner is responsible for the instructional design and its alignment with the research findings. The planner and facilitator select the resources for each day of the three-day training workshop, as well as recruit participants for each offering. The participants, clinical preceptors, are learners who complete the three-day training workshop and provide summative feedback of the training workshop throughout the three days and then a formative evaluation six weeks after the training workshop. The program planner and facilitator evaluate the feedback in an effort to make enhancements for future workshop offerings.

**Project Details**

The agenda for the three-day clinical preceptor training workshop is presented with detailed time spans for each topic (Appendix A).On the first day of the training workshop, the content will focus on defining clinical preceptorship role and the characteristics of an effective preceptor. Before any content is presented, the participants will complete a pretest with basic preceptor knowledge and decision making in student-related scenarios. Discussion of content in the Power Point (slide 1-8) will detail the role of the clinical preceptor and specific characteristics of effective preceptors. After lunch, a webinar provided by the Society of Diagnostic Medical Sonographers will instruct how to create educational moments in a busy department. Discussion will follow with group activities that will re-enforce the content presented in the Power Point and webinar. Student scenarios will provide a catalyst for discussion. At the end of the day, the

facilitator will recap the day's session by debriefing the participants with key concepts. Participants will evaluate the sessions for the first day.

The second day is formatted similar to the first day. The morning will begin with a brief reflection from the previous day's discussions and resources. In order to help the preceptor understand the importance of recognizing a student's learning style, the facilitator will have each participant complete an online learning styles inventory. Discussion will follow as the participants learn about instructional methods for meeting the student's needs based on the identification of the student's learning style. Another webinar provided by the Society of Diagnostic Medical Sonographers will provide instruction about learning-style directed clinical education. Slide 9 of the training workshop's Power Point will be reviewed. Discussion will follow regarding instructional methods that are helpful in a clinical environment. After lunch, the topic of providing feedback to a student following the performance of a skill will be discussed. A webinar entitled "How to Provide Effective Feedback to Improve Clinical Skills" will be viewed and discussed. Group activities and focus group discussions will provide ideas for improving effective communication skills. At the end of the day, the facilitator will re-cap the day's session by debriefing the participants with key concepts. Participants will evaluate the sessions for the first day.

On the final day, the morning will begin with a brief reflection of the second day's key concepts. The facilitator will then review the program's policies for clinical as well as each criteria listed on the clinical evaluation tool. Questions from the preceptors will be answered by program faculty. Another short webinar will be viewed detailing

methods for assessing student competency and the final slides from the workshop's Power Point will be reviewed. After lunch, group activities and role play sessions will allow participants to apply things learned during the workshop. At the end of the day, the participants will be asked to complete a posttest regarding clinical preceptorship and share whether or not they scored better than on the pretest. Final thoughts and best practices will be reviewed before the participants evaluate the third day's sessions.

Participants will be informed that they will receive an evaluation to determine if the training they received during the workshop proved to be helpful in their role as a clinical preceptor. An email contact will be recorded for each participant so the online evaluation can be conducted.

## Project Evaluation Plan

As an ongoing effort to gather feedback while the sessions were occurring, the project planner and facilitator remained approachable for input shared by participants. This ongoing feedback will allow for enhancements to occur during the training workshop and for editing future workshops. Once the participants complete each day of the training workshop, they will complete a formative evaluation assessing the physical facilities, instructional resources, facilitator, and overall value of the workshop as it related to their expectations. In addition, the facilitator will request all participants complete a formative assessment six weeks after completing the workshop. This feedback will provide the planner and facilitator with information regarding affective behavioral changes that may have occurred as a result of the training workshop.

## Type of Evaluation and Justification

Evaluation of the training workshop will provide feedback that will be helpful in planning future training workshops. The evaluation process will include informal reflections during the workshop, and summative and formative evaluations. All of these evaluation methods were used to assess the ongoing development of the training workshop and the actual outcomes as perceived by the participants. By using informal feedback and formative and summative feedback, the compilation of response provides a broader insight into the effectiveness of the training workshop.

## Informal Feedback

The learning environment for the training workshop will be relaxed and the facilitator and planner will remain approachable and aware of participant comments throughout each session. Notes taken by the planner and facilitator will allow the planner to re-evaluate the content and resources for future changes to the training workshop. This informal method for gathering enhancement ideas may provide very beneficial information for keeping the content current and meeting the needs of the participants.

## Formative Evaluation

At the end of each day of the training workshop, participants will be requested to complete a formative evaluation regarding all sessions (Appendix K). George and Cowan (2013) indicated that formative evaluation is conducted in an attempt to garner feedback for improving the educational experience during the time it is occurring. All stakeholders can participate in the formative evaluation process. The formative

evaluation is conducted internally and is used to amend the workshop as the event is being planned or implemented to ensure that the intended goals and objectives are met.

**Summative Evaluation**

The summative evaluation is conducted after training occurs and focuses on the outcomes of the program as perceived by the participants (Grohmann & Kauffeld, 2013). In addition, the summative approach allows the program planner to evaluate if affective behavioral changes occurred as a result of the learning process. The focus is on outcomes. Six weeks after the training workshop, participants will be requested to complete a post-completion evaluation to determine if the training was beneficial to their current role as a clinical preceptor. It should also be noted that the participants will be given a pretest during the first session of the training workshop. I would like to see 75% of the participants score 50% higher on the posttest which will be giving on the final day of the workshop (Appendix K). The information gathered from the pre and post test results coupled with the post-training evaluation will enlighten the program planner and facilitator as to whether the workshop outcomes were successfully met.

## Social Change Implications

From the beginning of discussions with faculty who presented their concerns over the local problem, the potential for social change was identified. The key stakeholders include current students, future students, clinical preceptors, and the medical profession, which may provide value to many allied health professions as the identified problem is an on-going concern for most educators. Findings from the study were used to design a clinical preceptor training session in a power point formatthat will provide current and

future preceptors with knowledge and a better understanding of the program policies and procedures. It should be noted that students in the program are required to review and document understanding of the program handbook of policies and procedures via a notarized affidavit of undertstanding. By getting all of the clinical preceptors on the same page with a thorough understanding of program policies, the consistency of evaluation for sonography students should improve. Students attending clinical experiences in all affiliates should experience the same expectations and be graded accordingly, thereby enhancing the overall learning opportunities for students through consistent feedback.

Social change will occur locally in the medical community through reinforced evaluation practices created as a result of this study. These practices can then be presented for other allied health programs that use clinical evaluation tools to assess student professionalism and performance. The potential for a larger social change in the health professions exists.

Section 4: Reflections and Conclusions

## Introduction

In Section 4, I will reflect on the project's strengths and limitations, describe personal reflections, and offer recommendations regarding this project study. I will also include my thoughts on scholarship and project development.

The project study was based on Knowles's adult learning framework. Most adults are self-motivated and have a desire to learn through interactive means. Problem-centered learning requires the learner to be committed and self-directed experiential learning. In the program studied, clinical preceptors facilitated those learning experiences for students and then scored the students according to their performance of specific skills.

The adult learning framework as presented by Malcolm Knowles recognized the desire of adult learners to gain knowledge in a specific topic by interactive performance of learned content. Andragogy or adult learning assumes the learner's desire to participate or perform learned tasks relative to the core knowledge taught (Knowles, 1972). In the program studied for this project, the students were adult learners who learned concepts in the classroom, practiced the related skills in a lab, and then performed those skills under the direct supervision of a clinical preceptor in a real patient-care setting. The students learned, they practiced, and then they performed. Therefore, the student-preceptor relationship was very important in the learning and evaluation process.

It was also very interesting to note that Knowles's theory of adult learning even applied to the preceptors in the training workshops. All of the preceptors were adult

learners who were motivated to learn more about their role as a clinical preceptor. They wanted to know more about precepting so that they could be a better role-model and clinical instructor. The resources that were used to provide the training instruction will continue to be of assistance to the preceptors as they reference the material with future students in the clinical setting. The preceptors use their personal experiences working with students to identify with topics discussed, therefore building on their communication and evaluation skills as a preceptor. The role-modeling sessions and discussion scenarios provided problem-based learning that incorporated the ideas and best practices presented during the three-day training workshop.

## Project Strengths and Limitations

Reviewing the program's student handbook and policies were very beneficial when designing the training power point. The findings and analysis of the interviews and field notes gathered during the research process also provided detailed responses to support the themes identified. Reviewing the program's student handbook provided me with a history of the program along with the program's mission and goals. Policies and procedures required for participation in the program and in the clinical setting proved helpful in understanding the expectations of from the student's vantage point. The information was presented in a cumulative format and the goal of the training was to provide important information for review by clinical preceptors.

A strength of the project was that the content was catered to meet the needs of clinical preceptors. Input from the graduate and preceptor interviews allowed me to identify needs to help bring consistency to the clinical evaluation process across all of the

program's clinical sites. When the training workshop was advertised to potential participants, the response to attend was overwhelmingly positive.

Limitations for the project include a concern about delivering the training workshop to participants who had limited time to attend outside of their work schedules. Eventually some of the employers allowed their preceptors to attend one of the scheduled sessions as part of their work schedule. The facilitator received multiple phone calls requesting an online format. Unfortunately, asynchronous learning would limit the interactive exercises that assisted in the training process. Consideration for future workshops may include offering a portion of the material online and requiring at least one day of engaged discussions.

Professional continuing education credits were not offered for the training workshop because the workshop was conducted as a free resource for the program preceptors. If application for professional credits was pursued, the training workshop would be offered for a fee in an effort to cover the costs associated with offering credits. Offering credits would be an option for other allied healthcare professionals who desired to become a clinical preceptor in their specialty. However, future participants may need to receive approval for participating as a preceptor for a specific program. In addition, adjustments will need to be made to the content reflective of the specific medical specialty.

## Recommendations for Alternative Approaches

The identified problem of inconsistency in clinical evaluations in a sonography program may be addressed in other ways. A review of students' evaluation grades may

offer insight into discerning preceptors who inflate scores by simply checking off the program's clinical evaluation with all excellent scores and those preceptors who score each line item with considerate judgment (Appendix B). It was noted from the instructors that some preceptors offer detailed commendation of the student's strengths and a comprehensive list of enhancement ideas for improvement of the student's performance. A review of clinical evaluation scores may provide data that demonstrates trends in scoring from certain sites and preceptors.

As for training to improve consistency in the evaluation process, I recommended an on-campus training session. However, with the number of clinical sites within a 100-mile radius of the community college, an on-campus session may be under-attended. The drive and time involved may not be feasible for preceptors to attend without time off or fiscal compensation. Therefore, offering the training workshop online via a live online classroom may be a feasible option for training multiple preceptors from multiple sites, with varying driving distances and busy work schedules.

Based on the findings of this project study and literature reviewed, I am not sure that total consistency could ever be achieved because of the subjectivity of all preceptors involved in the clinical evaluation process. Each individual has personal beliefs, ethics, and methods for performing a comprehensive sonographic exam. Because of the inherent subjectivity of all candidates, inconsistency exists even when using an objective evaluation tool.

The following suggestions for improving consistency in the clinical evaluation of students' skills performance were determined from the research and literature reviews conducted with this project study.

- The preceptor should get to know the student, his learning style, and which level of education or semester he is in currently. Rationale: Understanding the students' learning style, strengths and weaknesses will guide the preceptor in modeling required behaviors conducive to successful progression.
- The preceptor should maintain a professional preceptor-student relationship in order to avoid personal biases when evaluating students. Rationale: The preceptor and student should not communicate via social media or socially outside of the clinical schedule as this informal communication will affect how the preceptor evaluates the student and how the student may alter program expectations when performing in the relaxed environment.
- The student is responsible for complying with program and clinical policies while achieving goals and objectives required for progression. Rationale: When students understand the program's expectations for clinical experiences, the preceptor is not put in a situation that may cause dissention.
- The program faculty must effectively communicate with clinical preceptors on a routine basis. Rationale: Faculty must communicate course expectations with clinical preceptors and visit the sites regularly in order to establish a program-

preceptor relationship. Clinical visits or phone calls are effective ways to relay policy information.

- The preceptor must make a way for teachable moments to occur during a busy work schedule. The preceptor should communicate to the students their expectations for learning as well. Preceptor training workshops provide an opportunity for brainstorming and sharing ideas that work well when precepting students. Rationale: Teachable moments allow the preceptor to provide immediate feedback to the student while performing a skill.

## Scholarship, Project Development, and Leadership

Throughout the project study, I learned a great deal about the research process. I found the most time-consuming piece was the literature review. However, it provided the wealth of knowledge I needed to better understand the research process. The literature review related to the identified problem was quite interesting from a professional standpoint. I found the material provided enhancement opportunities for my current position as an educator and as a state leader in the ultrasound profession. I am thrilled to see how the project's findings can be used to enhance future clinical evaluation processes and preceptor training.

As a scholar, I have learned how easy it is to research any topic and find out what the best practices are in my profession. The research process has enlightened me by providing me with a method of finding support for program practices and policies. I will have to review the specifics about research methods but the overall concepts will allow me to pursue additional research interests after completing my degree.

As a practitioner and educator, I have grown tremendously by increasing my knowledge base of best professional practices as well as enhanced leadership skills. My reflective abilities have broadened in some ways and narrowed in others. For example, I have broadened my way of thinking by looking at the whole picture, both locally and professionally. In addition, I am able to weed out the "noise" when assessing situations with other faculty, as well as students. I feel as though I've grown beyond my scope of practice professionally by being able to look forward to the social change that can occur with the project findings. I developed a preceptor training module and present the findings of this study to our national educators group.

## Reflection on the Importance of the Work

Any time that one can take the subjectivity out of a student performance evaluation, one has successfully improved the true discernment of the student's skills and professionalism. According to the graduate interview, too many times students are graded for their personality, their potential to be a future employee, or because they demand a good grade. When the student is fully aware of performance expectations and the clinical preceptor is fully cognitive of the program's expectations for students, consistency will inherently improve. However, the subjectivity may still conflict with actual performance. Creating an evaluation tool that is purely objective may never exist, but care must be taken to design a tool that limits biases from the evaluator.

This project study has empowered me to design a preceptor training module for my allied health program. I would like to see all preceptors be required to complete the training in order to work with students. I feel as though the student expectations piece is

already in place, as the students have in their possession the program handbook and related documents, which are reviewed at the beginning of the program.

In addition, I have learned how easily accessible peer-reviewed, scholarly articles are and how helpful they can be when establishing policy or investigating best practices. As an educator and administrator, I find this refreshing as it allows me to look beyond a local situation or problem to gather advice and evidence for problem solving.

## Implications, Applications, and Directions for Future Research

This project study allowed me to explore a concern that many allied health programs experience, the lack of consistency in clinical evaluations by preceptors who are not employed by the college and volunteer their time during work to share clinical experiences with students. Most preceptors are uncompensated and are not formally trained to be preceptors. Employers benefit from having students in the clinical setting by sharing the work load and performing routine tasks, such as stocking rooms, taking patients to the bathroom, and cleaning. Precepting a student requires patience, a nurturing heart, and the ability to serve as a professional role model who will provide instant feedback to the student regarding performance. The stress levels and responsibilities are much greater as one mentors a student. Personality differences exist between students and preceptors, sometimes resulting in tense situations. First priority for the preceptor is providing optimal patient care. Preceptors may not be able to give the student time to perform independently at a slower pace when the patient load is overwhelming busy.

In spite of potential barriers in the clinical environment, I believe the impact for potential positive social change exists for many stakeholders. For the clinical facility, a student brings the ability to help with the workload and ask the preceptors questions, thereby keeping the staff more in tune with details of anatomy, physiology, and acceptable practices. The students constantly share concepts learned, often refreshing the knowledge base of preceptors and staff. The students benefit by learning great tips from a variety of technologists and preceptors, as there as many ways to correctly perform the same task. The patients benefit by the added attention and care that a student provides in the clinical setting, whether physically or emotionally. Physicians and patients may also benefit from the assurance that students are enrolled in a programmatically-approved allied health program, noting its excellence in well-educated and nationally-certified sonographers. Overall, there are many facets at which society can experience a positive change.

Looking forward, the outcomes of this project study may offer insight into consistency in evaluation of clinical students for other allied health and nursing programs as some educational and professional similarities exist. Formal training sessions for all clinical preceptors is important, as expectations are clearly noted and professional outcomes are similar. Adult learners often learn by performance and are self-directed, reaping the benefits of efforts invested. This project study reflects the learning theory of Knowles by blending the reasons adults learn with the experiential experiences shared. In theory, students in allied health programs learn concepts in the classroom and practice

those concepts in a laboratory and/or clinical setting to optimal professional performance standards.

Positive research methods allow the collection and analysis of data to better explain a situation so that a hypothesis or idea can be proven or denied. Once the results yield productive outcomes or potential solutions, then the impact on that knowledge provides a strong foundation for advancement through design of helpful resources to address the initial concern. The outcomes may further provide insight for similar concerns in other professional fields, allowing a much broader use of the project's outcomes. In section two, I documented where preceptor training sessions have been beneficial in allied health, law enforcement, and social work. I see the results of this project study benefiting those same fields.

Future research should include studies regarding gender biases in evaluation scoring and variations in student scores before and after preceptor training. Some of the interviewees suggested that male preceptors scored stricter than their female colleagues. I believe clarification of grading expectations would result in more consistent overall evaluation scores post training as preceptors would better understand each characteristic graded. Future research regarding the benefits of online versus face-to-face training would provide insightful evidence of best practices for training clinical preceptors.

## Conclusion

Completing this project study has provided me with the confidence and knowledge of how to search the literature for common practices in any given situation. It has reinforced my belief in the importance and necessity of professional training and

continuing education. Assuming one understands expectations does not mean that one truly comprehends the task. Investigating the consistency in a specific field has made me realize that consistency is an issue in many professions and that perception varies from every vantage point. A clear understanding of program and student expectations is essential in developing professional, ethic, and skilled healthcare providers.

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## Appendix A: The Project

### Clinical Preceptor Training Workshop (3 day session)

**Agenda Day 1:**

| | |
|---|---|
| 9:00AM | Welcome & Introduction |
| 9:30AM | Review of Program Objectives |
| 10:00AM | Break |
| 10:30AM | Pretest: Clinical Instructorship |
| 11:00AM | Power Point: slides 1-18 |
| Noon | Lunch |
| 1:00PM | Webinar: Creating Educational Moments in a Busy Department |
| 2:30PM | Break |
| 3:00PM | Discussion: What is Clinical Preceptorship? |
| 4:00PM | Debriefing Session |

**Agenda Day 2:**

| | |
|---|---|
| 9:00AM | Brief Reflections |
| 9:30AM | Learning Styles Inventory |
| 10:00AM | Break |
| 10:30AM | Webinar: Learning-Style Directed Clinical Education |
| 11:30AM | Power Point: slide 24 |
| Noon | Lunch |
| 1:00PM | Webinar: How to Provide Effective Feedback to Improve Clinical Skills |
| 2:30PM | Break |
| 3:00PM | Discussion: Effective Communication Skills |
| 4:00PM | Debriefing Session |

**Agenda Day 3:**

| | |
|---|---|
| 9:00AM | Brief Reflections |

| | |
|---|---|
| 9:30AM | Program Policies & Clinical Evaluation Tools |
| 10:00AM | Break |
| 10:30AM | Webinar: Assessing Competency |
| 11:00AM | Power Point: 33-46 |
| Noon | Lunch |
| 1:00PM | Group Activities/Role Play Sessions |
| 2:30PM | Break |
| 3:00PM | Post Test: Clinical Preceptorship |
| 4:00PM | Final Thoughts: Best Practices |

# Agenda: Day 1

- 9:00 AM Welcome & Introductions
- 9:30AM Program Objectives
- 10:00 AM Break
- 10:30AM Pre-Test: Clinical Instructorship
- 11:00AM Review Slides 1-17
- Noon Lunch
- 1:00PM Webinar: Creating Educational Moments in a Busy Department
- 2:30 PM Break
- 3:00PM Discussion: What is Clinical Preceptorship?
- 4:00PM Debriefing Session

# Welcome & Introductions

All attendees will share the following information:

- Name
- Clinical Site Affiliation
- Years as Sonographer
- Sonography Certifications

## Program Objectives

- Define the role of the clinical preceptor
- Demonstrate the ability to identify learning styles
- Discuss teaching strategies and resources for clinical instructorship
- Discuss the clinical evaluation tool and expectations for performance
- Discuss ideas for providing consistency in evaluation
- Discuss student behavior scenarios and best practices

Notes: The facilitator should state the program objectives.

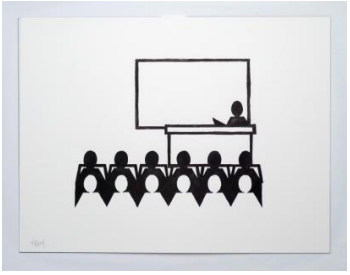
## Pre-Test: Clinical Instructorship

- Complete the pre-test to evaluate what you currently know about clinical instructorship


Notes: Ask the participants to complete the pretest as an indicator ofcurrent knowledge. The test will not be graded but used as an evaluation of current knowledge prior to completion of this training program.

## Review of Slides 1-17

- Facilitator will discuss key concepts of each slide
  *(additional notes under each slide)*



## Webinar:

## Creating Educational Moments in a Busy Department

## Discussion:

### What is Clinical Preceptorship?

Notes: Discuss key concepts already learned. Share scenarios about student-preceptor relationships. Focus on ideas that improve the student-preceptor relationship.

## Debriefing Session

- Reflect on the role of clinical precepting
- Define the student-preceptor relationship
- Discuss ways to create educational moments for students

## What is a Clinical Preceptor?

- A clinical preceptor is a highly-skilled diagnostic medical sonographer who WANTS to share his/her many sonography talents with eager students who desire to learn how to perform sonographic procedures with accurately and efficiency.
- A clinical preceptor MUST be certified in the specialty in which they grade students:

Notes: Discuss definition of a clinical preceptor. Ask if the audience about their thoughts regarding the definition of a clinical preceptor. Stress that CAAHEP-accredited programs like this college must have certified sonographers working with students.

## CAAHEP Program Accreditation Requires…

- CAAHEP Standards for accredited programs require that all clinical instructors providing student training possess the appropriate credential applicable to the exams they are instructing.
- Any of the following credentials from ARDMS, ARRT and CCI, are accepted for clinical instructors in the following areas:

| | |
|---|---|
| **Abdomen**: | RDMS (AB), RT(S) |
| **OB/GYN**: | RDMS (OB), RT(S) |
| **Breast:** | RDMS (AB), RDMS (BR), RT(S) |
| **Neurosonology:** | RDMS (AB), RT(S), RDMS (NE) |
| **Adult Echocardiography:** | RDCS (AE), RCS |
| **Pediatric Echocardiography**: | RDCS (PE), RCCS |
| **Vascular:** | RVT, RVS |
| **Fetal Echocardiography:** | RDMS (OB), RDMS (FE), RT(S), RDCS (PE), RDCS (FE), RCCS |

Notes: Explain that only preceptors certified in the above specialties can grade students. Answer any questions that participants may have for clarification of procedures and certification.

## Why should I be a Clinical Preceptor?

- You have a desire to share your profession by teaching future sonographers.
- You enjoy working with students who keep your skills fine-tuned by their questions about scanning procedures, anatomy, physiology, and pathology.

Notes: Ask participants why they are interested in being a clinical preceptor.

## Characteristics of a Preceptor

- Consistent grading of all students
- A professional role model
- Share knowledge of anatomy and pathology
- Fair and honest when grading students
- Does not grade student based on favoritism or personal bias
- Keeps your personal opinion and personal life separate from student-preceptor relationship
- Grade according to where the student is in the program
- Get to know the student & his/her learning style
- Know the program's policies & procedures
- Provides immediate feedback to student while scanning


Notes: As the facilitator reads each point, allow audience participation for clarification purposes.

## Characteristics of a Good Student

- Arrives on time & does not miss clinical time
- Follows program dress code and program & clinical policies
- Is polite, respectful, and helpful to sonographers, physicians, management, and patients
- Never has to be asked to scan
- Always keeps rooms properly stocked and cleaned
- Scans with EVERY opportunity
- Uses spare time wisely by working on knobology or practicing procedures
- Acts professionally at all times

Notes: Stress the characteristics of a good student. Perhaps share how some of these characteristics can be altered by less engaged students. Ask participants to share additional characteristics of good/bad students.

## How do I prepare to be a Clinical Preceptor?

- Be certified in the specialty that you are teaching
- Have a desire to teach students
- Review the program's policies & procedures
- Get to know the program faculty
- Ask questions if you are not sure
- Be honest, fair, objective, and consistent when grading a student
- Do not mix personal life with preceptor duties

Notes: Discuss ways to help a preceptor achieve the above ideas. Allow participants to share ideas that assisted them in preparing to be a clinical preceptor.

## What makes me a great preceptor?

- Be consistent when grading and mentoring students.
- Nurture students by allowing them to scan whenever possible, even if for a few minutes.
- ALWAYS provide immediate feedback to the student when he/she is scanning.
- Stay in contact with program faculty.

Notes: Stress each item as program faculty depends on honest input regarding the student's performance and behavior. Explain how this information can assist in developing a successful student.

## Brief Reflection of Concepts Learned from Day 1


Notes: What is the role of a clinical preceptor? Define the student-preceptor relationship.

## Learning Styles

To better understand learning styles, complete the following online Learning Style Inventory:

http://www.personal.psu.edu/bxb11/LSI/LSI.htm

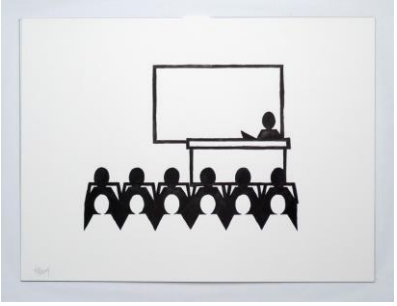
Notes: This activity will be completed in the computer lab next door.

## Webinar:

## Learning-Style Directed Clinical Education

## Review of Slide

- Facilitator will discuss key concepts of slide #24
  *(additional notes under each slide)*



## How do I evaluate a student?

- Understand the evaluation form(s).
- Know the program policies.
- Know where student is in the program.
- Ask program faculty if you have any questions.
- Be honest, consistent, and fair when scoring the form. Do not just check off the form. Add comments about the student's strengths and weaknesses.
- You may review the form with the student prior to sending it to the college.

Notes: As each item is discussed, ask the participants for input in the evaluation of students. Are there things that will help them evaluate students more effectively?

## Webinar:

### How to Provide Effective Feedback to Improve Clinical Skills

## Discussion:

### Effective Communication Skills

Notes: Discuss what effective communication skills are in a clinical environment. Share scenarios involving students and effective communication skills. Focus on ideas that improve the student-preceptor communication skills.

## Debriefing Session

- Briefly discuss learning styles
- Discuss ways to create educational moments for students based on various learning styles

# Clinical Preceptorship Training Day 3

FOCUS:
Program Policies and Evaluation Tools

# Agenda: Day 3

- 9:00 AM — Brief Reflection of Day 2 concepts
- 9:30AM — Program Policies & Clinical Evaluation Tools
- 10:00 AM — Break
- 10:30AM — Webinar: Assessing Competency
- 11:30AM — Review Slides
- Noon — Lunch
- 1:00PM — Group Activities/Role Play Sessions
- 3:00PM — Post-Test: Clinical Preceptorship
- 4:00PM — Final Thoughts: Best Practices

# Brief Reflection of Concepts Learned from Day 2

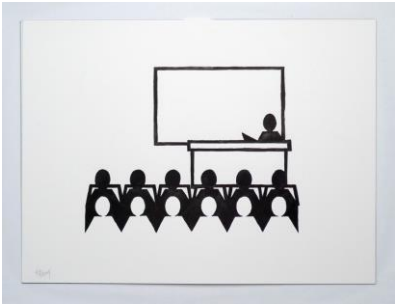
Notes: Reflect on different learning styles and how to optimize clinical experiences for various students by using effective communication skills.

## Webinar:

## Assessing Competency

## Review of Slides 33-46

- Facilitator will discuss key concepts of each slide
  *(additional notes under each slide)*



# Frequently Asked Questions

## What does the score mean?

**You should grade the student according to the semester they are in the program.**

**Unsatisfactory:** unable to perform in this trait
**Needs improvement:** needs to practice this trait more
**Average:** meets expectations for this trait relative to semester that student is in at this time
**Excellent:** exceeds expectations for this trait at relative to semester that student is in at this time

## Why is the evaluation divided into two parts?

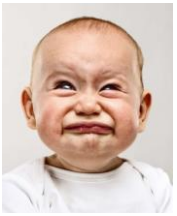
The first half of the evaluation form evaluates the professional qualities of the student. It counts 30% of the total score because SCANNING skills are most important. Skills evaluated in Part I include:

- Motivation & Initiative
- Dress Code and Presentation
- Attendance
- Communication Skills
- Daily Duties
- Patient Assessment

- **The second part of the evaluation scores the student's scanning skills. Skills evaluated in Part 2 include:**
  - Knobology
  - Ability to use the equipment efficiently
  - Image Optimization
  - Protocol
  - Interpretation Abilities
  - Correct utilization of 2D, Color, PW, CW, and other imaging tools

**What if I upset the student by giving him/her a less than perfect evaluation?**

- Avoid personal bias when grading a student.
- It is better to be honest with the student, then to not provide accurate feedback.
- Remember, the patient comes first, and we are to provide the best care for our patients.
- We must teach students that there is always room for improvement.



## How do I grade clinical competencies?

- Consistently
- Fairly
- According to student's level in the program
- According to program policies
- Avoiding personal bias or favoritism

- If the evaluation grade does not truly reflect how the student performs, then we can not help them improve.
- Sometimes an inflated evaluation grade in clinical does not match what their performance may be in the scan lab.

## Why is attendance so important?

- We are training FUTURE employees. Now is the time to make sure he/she appreciates their role as part of the team.
- Persistent tardies and early departures demonstrate character flaws.
- Only verify a student's arrival time if you see him/her when arriving.

## Why is the dress code so important?

- Sloppy dress reflects poorly on work ethic.
- Demonstrates ability to follow rules.
- PROFESSIONALISM is important when getting respect of others, especially patients.
- Shows the student's desire to be a positive reflection of the program and profession.

## Why do I do if the student arrives and is not compliant with the dress code?

You have the right to send them HOME.

## What do I do if there is an immediate problem with the student?

- Contact the Program Faculty immediately!
- You may send them HOME.
- NO student should be disrespectful to the preceptor or patients.

## What if I see the student performing in an unsafe or inappropriate way?

- Stop the student IMMEDIATELY.
- Explain to the student what was wrong.
- Call Program Faculty immediately.

## What is the cell phone policy?

- Students should NEVER have their phone in the clinical setting.
- They may use it on breaks or lunch.
- If a student is on the phone in a patient care area, SEND THEM HOME.


## SDMS CME credits for Clinical Instruction

- You earn 6 free CME credits each calendar year for working with our sonography students.
- Have the student complete the CME form.
- You sign it.
- Add your certification #
- CLEARLY write your email address so we can send your certificate to you.

## Why are YOU so important to our program, the profession, and the student?

**YOU make a difference in our profession EVERY day that you work with a student!**

## Group Activities/Role Play Sessions:

Group 1: Your student arrives late. How do you respond?

Group 2: Your have shared your evaluation comments with the student. The student verbalizes that she is not happy with your assessment. How do you respond?

Group 3: Your student arrives late and looks like he and his uniform just rolled out of bed. He does not have his name tag and his shoes are dirty. How do you respond?

Group 4: Your student fails her skills test. She asks you to make it disappear and allow her to retest. You suggest that she needs more practice before retesting. You later find out that she had a friend complete the evaluation and sign your name. How do you respond?

Notes: Divide the participants into four groups. Assign each group one of the activities to discuss, role/play, or present to the class.

## Post-Test: Clinical Instructorship

- Complete the post-test to evaluate what you learned about clinical instructorship as a result of this training workshop


Notes: Ask the participants to complete the posttest to evaluate what the participants learned from the training workshop. Compare the results of their pretest with their posttest.

## Final Thoughts:

### Best Practices


Notes: Discuss the best practices and key concepts learned from the training workshop. Explain how each develops successful clinical students.


Appendix B: Clinical Evaluation of Personal and Professional Growth Form

[redacted]
SONOGRAPHY PROGRAMS
Clinical Evaluation of Personal and Professional Growth
**FAX: [redacted] or complete online through [redacted]**

| | |
|---|---|
| **STUDENT:** | **DATE:** |
| **CLINICAL AFFILIATE:** | **SEMESTER:** |

| **GRADING METHOD:** ***relative to the student's semester in program**** | | **U** | **NI** | **A** | **E** |
|---|---|---|---|---|---|
| **Unsatisfactory**: unable to perform in this category | **0 points** | | | | |
| **Needs improvement** | **7 points** | | | | |
| **Average**: meets course expectations | **9 points** | **0 pts** | **7 pts** | **9 pts** | **10 pts** |
| **Excellent**: exceeds course expectations | **10 points** | | | | |

## PART I: counts as 30% of total evaluation grade

| **INITIATIVE & MOTIVATION:** | **U** | **NI** | **A** | **E** |
|---|---|---|---|---|
| 1. Demonstrates motivation/enthusiasm by willingness to perform tasks assigned (types in patient data, stocks room, scan, etc.) Delivers school related forms or paperwork to technologists in a timely manner. | | | | |
| 2. Student doesn't have to be asked to assist or perform scanning | | | | |
| 3. Demonstrates eagerness to scan patients or begins procedures | | | | |
| 4. Seeks information about atypical or new procedures by asking questions and/or by utilizing various resources. | | | | |
| **ATTITUDE:** | | | | |
| 5. Demonstrates receptivity to suggestions or corrections, exercises self-control, and demonstrates interest in assignments. | | | | |
| 6. Student accepts constructive criticism with an open-minded appreciation | | | | |
| 7. Works well with others and is a team player, uses tact, cooperation, courtesy, accepts supervision, considers feelings and interests of co-workers. | | | | |
| **DEPENDABILITY:** | | | | |
| 8. Completes all clinical or technical tasks as assigned. Is easily located at any given time. Notifies technologist of location when out of department. | | | | |
| **PROFESSIONAL JUDGEMENT:** | | | | |
| 9. Exhibits logical thought when making decisions or recommendations, demonstrates respect for confidential patient information. | | | | |
| 10. Ability to correlate patient history with sonographic findings | | | | |

| RELATIONSHIP WITH PATIENTS: | U | NI | A | E |
|---|---|---|---|---|
| 11. Is responsive to needs of patients, is courteous, establishes good rapport thereby gaining the patient's confidence, can adapt to accommodate differing patient conditions, properly verbalizes a complete introduction to patient to include name and sonography position and explains exam to patient to include type of examination, areas being visualized, preparation, and how exam is performed in terms understood by patient. | | | | |
| **ATTENDANCE AND PUNCTUALITY:** | | | | |
| 12. Is present at clinical affiliate without absence and/or tardiness, is on time or early, and does not leave early. | | | | |
| **PROFESSIONAL APPEARANCE:** | | | | |
| 13. Follows program's dress code policy and observes professional and personal hygiene policy. Student wears school photo ID badge DAILY. Student wears correct student uniform per JCC dress code. (Student wears correct lab coat with program patch on left sleeve – optional attire). Student's hair is pulled back and/or off collar. Student wears clear or no nail polish. Student wears only one pair of small, studded earrings (no dandling earrings), one watch, and one ring (or wedding set) per hand. Student does not wear bracelets or necklaces. | | | | |
| **ORGANIZATIONAL RESPONSIBILITY:** | | | | |
| 14. Accepts organizational policies and procedures, guidance and direction; Complies with orders and directives of the institution. Understands student and sonographer roles in patient care. | | | | |
| **EFFICIENCY:** | | | | |
| 15. Uses time wisely by participating in various constructive and/or learning activities. | | | | |
| 16. Utilizes spare time to assist in department preparedness (paperwork, filing, chart prep, stocking room, etc.). | | | | |
| 17. Practices keyboard and knobology or reviews ultrasound related material during spare time. | | | | |
| **REACTIONS UNDER STRESSFUL CONDITIONS:** | | | | |
| 18. Maintains composure under heavy workload conditions *or add-on procedures*, when working with difficult patients, during equipment malfunctions and during emergency situations. | | | | |
| **CLINICAL APPLICATIONS:** | | | | |
| 19. Demonstrates accuracy and professional attributes when performing clinical procedures or sonographic exams. Makes extra effort to insure accurate patient information and chart records. | | | | |
| 20. Follows previously taught information without repetitive mistakes or excessive repetition of errors. | | | | |
| 21. Demonstrates adequate knowledge of anatomy, physiology, and imaging planes. | | | | |
| 22. Understands disease process and actively pursues additional views to document pathology. | | | | |

| COMMUNICATION SKILLS: | U | NI | A | E |
|---|---|---|---|---|
| 23. Demonstrates the ability to communicate with various medical personnel (Radiologists, staff physicians, nurses, co-workers, etc.) in an appropriate and respectful manner. Doesn't discuss patient information or exam findings in front of patient or family members. Student demonstrates ability to control facial expressions. | | | | |
| 24. Student is respectful to technologists, staff, patients, and physicians. | | | | |
| **MACHINE TECHNOLOGY:** | | | | |
| 25. Demonstrates understanding of how to utilize equipment features during an exam. Understands how to utilize various functions of keyboard without significant hesitation. | | | | |
| 26. Demonstrates control of transducer, understands transducer orientation, and how to operate the machine's keyboard (CF, doppler, freeze, doppler angle, overall gain, TGC, printing images, etc.) | | | | |
| 27. Student does not have to be told the same information (knobology and image optimization) repeatedly. Retains and applies learned concepts without having to be retold. | | | | |
| . **EXAM PREPARATION:** | | | | |
| 28. Shows initiative in completing patient requests and necessary chart documentation, and other assigned duties. Prepares room for exam. Types in patient data, selects scanning application, and assists patient in dressing and getting on the exam table. Explains procedure to the patient. | | | | |
| **CLINICAL ASSESSMENT OF PATIENT:** | | | | |
| 29. Demonstrates how to obtain adequate clinical history from a patient including symptoms, past medical history, observance of chart data, and review of lab data and previous diagnostic exams. | | | | |
| **PRESENTATION OF FILMS:** | | | | |
| 30. Accompanies sonographer to show films and relay patient's clinical history to the interpreting physician. Enthusiastic about learning new material and sharing in discussion related to the sonographic exam. | | | | |
| **INTERPRETATION SKILLS:** | | | | |
| 31. Demonstrates the ability to ask questions regarding abnormalities or pathology. Notes correlation between abnormalities and the patient's clinical symptoms. | | | | |

| **CALCULATIONS:** | |
|---|---|
| **(U) _____ x 0 = _____**<br>**(NI) _____ x 7 = _____**<br>**(A) _____ x 9 = _____**<br>**(E) _____ x 10 = _____**<br>**Total: _____ / 310 = _____%** | **TOTAL % correct for PART I: (30% section)**  |

## PART II: counts as 70% of total evaluation grade

| SCANNING ABILITY: | U | NI | A | E |
|---|---|---|---|---|
| 1. Demonstrates the knowledge of how to correctly orient the transducer in order to find an imaging window. | | | | |
| 2. Demonstrates ability to manipulate the transducer for optimization of image. | | | | |
| 3. Selects the appropriate transducer and frequency for the sonographic procedure and scanning application. | | | | |
| 4. Correctly adjusts depth, focus, overall gain, and TCG throughout procedure. | | | | |
| 5. Retains and consistently implements corrections made to enhance scanning techniques. Student doesn't have to be told same information repeatedly. | | | | |
| 6. Demonstrates ability to use calipers and/or calculation package for accurate recording of measurements. | | | | |
| 7. Correctly identifies and labels anatomy/images. | | | | |
| 8. Consistently improves 2D image by optimizing technical factors | | | | |
| 9. Consistently improves the Doppler spectral image by optimizing technical factors by correctly using L/C/R, scale, filter, and baseline. | | | | |
| 10. Consistently improves color flow image by optimizing technical factors by correctly using L/C/R, scale, filter, and baseline. | | | | |
| **SCANNING PROTOCOL:** | | | | |
| 11. Demonstrates the understanding of following a scanning protocol and how it correlates with the patient's history, symptoms, and sonographic appearance | | | | |
| 12. Demonstrates ability to alter protocol as needed for patient conditions or for departmental preferences. | | | | |
| 13. Demonstrates use of comprehensive scanning protocol | | | | |
| 14. Completes the procedure in a reasonable amount of time. | | | | |

**CALCULATIONS:**

**(U) _____ x 0 = _____**

**(NI) _____ x 7 = _____**

**(A) _____ x 9 = _____**

**(E) _____ x 10 = _____**

**Total: _____ / 140 = _____%**

**TOTAL POINTS for PART II: (70% section)**

| PART III: COMMENTS | | |
|---|---|---|
| A. Areas in which the student excels | | |
| B. Areas in which improvement is needed | | |
| **SONOGRAPHER SIGNATURE:** | **CREDENTIALS:** | **DATE:** |
| **FACULTY SIGNATURE:** | | **DATE:** |
| **STUDENT SIGNATURE:** | | **DATE:** |

**Part I score:** _____ **x 30 =** _____

**Part II score:** _____ **x 70 =** _____

**Total points:** _____ **/ 100 =** _____

**FINAL SCORE:** _____

**NOTE:** If a student receives a Mid-term evaluation grade below 77%, he/she will be placed on Academic & Clinical Probation. If a student receives an End-of-Semester Evaluation grade below 77% after receiving a Mid-term evaluation grade below 77%, the Academic & Clinical Probation will not be lifted and the student will receive a final course grade of "F" and will not progress to the next semester.

| GRADING SCALE: | | | |
|---|---|---|---|
| | A | 93-100 | 4.0 |
| | B | 85-92 | 3.0 |
| | C | 77-84 | 2.0 |
| | F | Below 77 | 0.0 |

rev. 3/16

Appendix C: Copy of Letter from the Clinical Coordinator

**Consistency in Evaluations**

[redacted]

**Sent:** Sunday, July 12, 2015 7:24 PM
**To:** [redacted]

Hello [redacted]

Based on the clinical evaluations received, there is a problem with consistency between students. I will provide you with a list of students and preceptors for your information.

Thank you for your consideration, [redacted]

--

[redacted]
Sonography Instructor/Clinical Coordinator
[redacted]

E-mail correspondence to and from this address may be subject to the [redacted]
Law and may be disclosed to third parties by an authorized state offic

# Appendix D: Participant Demographic Form

| | |
|---|---|
| Participant # | |
| Gender | |
| Age | |
| Job Title | |
| Professional Certification(s) | |
| Highest Degree Obtained? | |
| Number of Years Graduated or as a Preceptor | |

## Appendix E: Interview Protocol & Research Questions

Project: Consistency in Clinical Preceptor Field Training for Sonography Students

Interviewee:

Date/Time/Location:

Process: Five graduates of the sonography program and five clinical preceptors will be interviewed individually in person. Each interview will be audio- recorded for future transcription. A process of member checking will occur so that each interviewee can evaluate the transcript for accuracy. Upon approval, I will evaluate the transcripts for common trends and additional findings.

The following interview questions will be used for the graduates:

1. Have you experienced inequality in a clinical evaluation? If so, describe the inequality.
2. Describe a situation from your own experience where equitable expectations for students was important during clinical evaluations.
3. Describe the amount and type of feedback that you received from your clinical preceptor and whether it was helpful.
4. Did you find that all clinical preceptors understood and enforced the program's policies and procedures for students? Can you give me an example of why you feel that way?
5. Describe an incident where you felt your clinical preceptor went out of the way to be a consistent evaluator.

6. Can you describe an example of inequality that occurred between two different clinical sites?
7. What are the most important characteristics for ensuring consistency in clinical evaluation?

The following interview questions will be used for the clinical preceptors:

1. Describe how you adapt to the different learning styles of a student.
2. Describe a situation where equitable expectations for students was important during clinical evaluations.
3. Describe an incident where you went out of the way to be a consistent evaluator.
4. Give an example of a situation where a student confronted you about an inconsistency in evalution.
5. How do you ensure that you understand the program's policies and procedures so that you are an effective and equitable evaluator?
6. How do you know that your student understands your performance expectations?
7. What are the most important characteristics for ensuring consistency in clinical evaluation?

Appendix F: Field Notes

| Interviewee # | |
|---|---|
| Date/Time/Location | Observation of participant's emotional presentation, context of interview, and researcher's insights that seem important |
| Question 1 | |
| Question 2 | |
| Question 3 | |
| Question 4 | |
| Question 5 | |
| Question 6 | |
| Question 7 | |

Appendix G: Confidentiality Form

Name of Participant: _____

During the course of my activity in transcribing data for this research "Consistency in Clinical Preceptor Field Training for Sonography Students" I will have access to information, which is confidential and should not be disclosed. I acknowledge that the information must remain confidential, and that improper disclosure of confidential information can be damaging to the participant.

*By signing this Confidentiality Agreement, I acknowledge and agree that:*

1. I will not disclose or discuss any confidential information with others, including friends or family.
2. I will not in any way divulge, copy, release, sell, loan, alter or destroy any confidential information except as properly authorized
3. I will not discuss confidential information where others can overhear the conversation. I understand that it is not acceptable to discuss confidential information even if the participant's name is not used.
4. I will not make any unauthorized transmissions, inquiries, modification or purging of confidential information.
5. I agree that my obligations under this agreement will continue after termination of the job that I will perform.
6. I understand that violation of this agreement will have legal implications.
7. I will only access or use systems or devices I'm officially authorized to access and I will not demonstrate the operation or function of systems or devices to unauthorized individuals.

***Signing this document, I acknowledge that I have read the agreement and I agree to comply with all the terms and conditions stated above.***

**Signature: _____ Date: _____**

# Appendix H: Pretest/Posttest for Workshop

## Clinical Instructorship Awareness

**_____Pre-Test _____Post-Test**

*Please answer the following questions and choose the best answer for multiple choice questions.*

1. Name 3 qualities of an effective preceptor that you would list as most important.

2. What is the clinical preceptor's responsibility in the Family Education Rights and Privacy Act?

3. Define what consistency in grading means to you as a preceptor.

4. How many CME can a clinical preceptor receive each year for mentoring students?

5. A student arrives late for his clinical assignment. What do you do?
   a. Send the student home
   b. Call program faculty
   c. Lecture the student about being on time for clinical assignments
   d. Allow the student to log in via Trajecsys

6. A student blatantly disrespects you or the patient in the clinical setting. What do you do?
   a. Send the student home
   b. Call program faculty immediately
   c. Lecture the student about being on respectful
   d. All of the above
   e. A and C only

7. A student fails a clinical competency on the first attempt. What do you do?
   a. Contact program faculty
   b. Turn in the failed grade
   c. Tell the student they just "don't get it"
   d. Destroy the first attempt, practice with the student, and re-comp him when you know he will be successful
   e. All of the above
   f. A and B
   g. A and D

8. A student falsifies a clinical document or records procedures that they did not participate in. What do you do?
    a. Send the student home
    b. Call program faculty
    c. Lecture the student about honesty and integrity
    d. Just pretend you didn't see it happen

9. A student's performance is very weak. You have to complete the student's clinical evaluation and personal growth form. What do you do?
    a. Check them off because you like them
    b. Check them off because you didn't want to cause a problem or have student retaliate
    c. Complete the form honestly, providing constructive feedback so student can improve
    d. Refuse to allow that student to return to your clinical site

10. A student wants to 'friend' you on social media and plans to go out with you and other techs at a local pub. What do you do?
    a. Tell the student that would be wonderful!
    b. Tell the student can be a friend on social media but can't go with students to the local pub
    c. Go to the pub but look around to make sure no one takes a picture of you and the student to later post online
    d. Tell the student that the clinical preceptor-student relationship must remain professional
    e. Tell the student that would be ok since the program faculty will never know

11. Does the program have a policy on the following topics:
    - Dress code ____yes _____no
    - Attendance ____yes _____no
    - Social media ____yes _____no
    - Performing isolation procedures ____yes _____no
    - Obtaining paperwork regarding a patient's history for a case study ____yes _____no
    - Calling IN late/OUT at clinical ____yes _____no
    - Substance Abuse ____yes _____no
    - Wearing perfume/cologne ____yes _____no
    - Dating someone from clinical ____yes _____no

12. Providing additional comments regarding a student's strengths and weaknesses doesn't really make a difference because faculty and students don't really read them.
    a. True
    b. False

# Appendix I: Learning Styles Inventory Workshop



## Learning Style Inventory

*To gain a better understanding of yourself as a learner, you need to evaluate the way you prefer to learn or process information. By doing so, you will be able to develop strategies which will enhance your learning potential. The following evaluation is a short, quick way of assessing your learning style. No studies have validated this inventory. Its main benefit is to get you to think about yourself, to consider learning alternatives; not to rigidly classify you.*

*Answer each question honestly.*

***Instructions:*** *Click on the appropriate button after each statement. After answering all questions, click on the* ***Determine Style*** *button below.*

### Learning Styles Inventory

| Questions | Seldom | Sometimes | Often |
|---|---|---|---|
| **1. I can remember more about a subject through the lecture method with information, explanations and discussion.** | ○ | ○ | ○ |
| **2. I prefer information to be presented the use of visual aids.** | ○ | ○ | ○ |
| **3. I like to write things down or to take notes for visual review.** | ○ | ○ | ○ |
| **4. I prefer to make posters, physical models, or actual practice and some activities in class.** | ○ | ○ | ○ |
| **5. I require explanations of diagrams, graphs, or visual directions.** | ○ | ○ | ○ |
| **6. I enjoy working with my hands or making things.** | ○ | ○ | ○ |
| **7. I am skillful with and enjoy developing and making graphs and charts.** | ○ | ○ | ○ |
| **8. I can tell if sounds match when presented with pairs of sounds.** | ○ | ○ | ○ |
| **9. I remember best by writing things down several times.** | ○ | ○ | ○ |
| **10. I can understand and follow directions on maps.** | ○ | ○ | ○ |
| **11. I do better at academic subjects by listening to lectures and tapes as opposed to reading a textbook.** | ○ | ○ | ○ |
| **12. I play with coins or keys in pockets.** | ○ | ○ | ○ |
| **13. I learn to spell better by repeating the words out loud than by writing the word on papers.** | ○ | ○ | ○ |
| **14. I can better understand a news article by reading about it in the paper than by listening to the radio.** | ○ | ○ | ○ |
| **15. I chew gum, smoke, or snack during studies.** | ○ | ○ | ○ |
| **16. I feel the best way to remember is to picture it in your head.** | ○ | ○ | ○ |
| **17. I learn spelling by tracing the letters with my fingers.** | ○ | ○ | ○ |
| **18. I would rather listen to a good lecture or speech than read about the same material in a textbook.** | ○ | ○ | ○ |
| **19. I am good at working and solving jigsaw puzzles and mazes.** | ○ | ○ | ○ |
| **20. I play with objects in hands during learning period.** | ○ | ○ | ○ |
| **21. I remember more by listening to the news on the radio rather than reading about it in the newspaper.** | ○ | ○ | ○ |
| **22. I obtain information on an interesting subject by reading relevant materials.** | ○ | ○ | ○ |
| **23. I feel very comfortable touching others, hugging, handshaking, etc.** | ○ | ○ | ○ |
| **24. I follow oral directions better than written ones.** | ○ | ○ | ○ |

After answering each question, click on the button below.

Determine Style

**Your survey results will appear here.**

**About the Three Styles**

If you are an AUDITORY learner, you may wish to use tapes. Tape lectures to help you fill in the gaps in your notes. But do listen and take notes, reviewing notes frequently. Sit in the lecture hall or classroom where you can hear well. After you have read something, summarize it and recite it aloud.

If your are a VISUAL learner, then by all means be sure that you look at all study materials. Use charts, maps, filmstrips, notes and flashcards. Practice visualizing or picturing words/concepts in your head. Write out everything for frequent and quick visual review.

If you are a TACTILE learner, trace words as you are saying them. Facts that must be learned should be written several times. Keep a supply of scratch paper for this purpose. Taking and keeping lecture notes will be very important. Make study sheets.

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# Appendix J: Group Activities for Workshop

Group 1: Your student arrives late. How do you respond?

Group 2: Your have shared your evaluation comments with the student. The student verbalizes that she is not happy with your assessment. How do you respond?

Group 3: Your student arrives late and looks like he and his uniform just rolled out of bed. He does not have his name tag and his shoes are dirty. How do you respond?

Group 4: Your student fails her skills test. She asks you to make it disappear and allow her to retest. You suggest that she needs more practice before retesting. You later find out that she had a friend complete the evaluation and sign your name. How do you respond?

# Appendix K: Training Workshop Evaluation

## Training Workshop Evaluation

**Workshop Title:** Clinical Preceptor Training Workshop

**Date:** _____ **Facilitator:**_____

**The instructors were knowledgeable of content, organized, and clearly presented the material.**

Strongly Agree Agree Neutral Disagree Strongly Disagree

**The facilities and instructional resources were adequate for the training workshop.**

Strongly Agree Agree Neutral Disagree Strongly Disagree

**The workshop content provided current information applicable to my role as a clinical preceptor.**

Strongly Agree Agree Neutral Disagree Strongly Disagree

**Adequate time was provided for questions and discussion.**

Strongly Agree Agree Neutral Disagree Strongly Disagree

**The workshop met my needs and was helpful in preparing me to be a better clinical preceptor.**

Strongly Agree Agree Neutral Disagree Strongly Disagree

**Additional topics that should be covered in future workshops?**

_____

**Most Helpful Topics?**

_____

**Least Helpful Topics?**

_____

**Additional Comments:**

_____

***Thank you for your feedback and for all that you do for our students.***

Appendix L: 6 weeks Post-Completion of Training Workshop

# Post-Completion Evaluation of Clinical Preceptor Training Workshop (delivered online to participant email)

**Were you able to use the information learned in the workshop in your current role as a clinical preceptor? Please share an example.**

**Were there situations that you encountered with students that you were able to respond to more effectively as a result of the training? Please share an example.**

**Are there additional topics that you would like to see included in future workshops?**