Student Nursing Skill Achievement through Self-Regulated Learning

A Dissertation submitted

By

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We hereby certify that this Dissertation, submitted by Cynthia DeLanie, conforms to acceptable standards and fully fulfills the Dissertation requirements for the degree of Doctor of Education from College of Saint Mary

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Dedication

I would like to dedicate my dissertation first to God who has helped me realize my goals and answered prayers when I felt things were impossible.

Secondly, I dedicate this to my husband Scott who has always believed in me, even when I doubted myself. He has always provided support and encouragement along the way.

Thirdly, I dedicate this to my loving children and family members that cheered me on and gave hugs when I needed them most.

Lastly, I dedicate this to my students that always teach me more than I teach them. It is an inspiration to see them grow as students and become professional nurses. It is also an honor to teach at Midland University where I am always encouraged to grow as a faculty member.

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village!

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Abstract

This study set out to investigate the relationship between self-assessment of skill achievement and self-regulated learning in first year nursing students from a small, private Midwest baccalaureate nursing program. The study sample included 17 students ranging in age from 19-28 and included both males (24%) and females (76%). An independent samples *t* test demonstrated no significant differences in the mean nursing skill scores between students and faculty for total skill scores (*t*= .202, *p*= .841) and Foley skill scores (*t*= -1.281, *p*= .210). A paired samples *t* test displayed no significant differences in the mean Motivated Strategies for Learning Questionnaire (MSLQ) construct scores meta cognitive self-regulation (*t*= .508, *p*=.618), rehearsal (*t*= .637, *p*=.533), and effort (*t*= .487, *p*=.633) before and after student self-assessment of nursing skill achievement. The MSLQ construct peer learning demonstrated a significant difference between the pre and post MSLQ test (*t*= 4.114, *p*< .001). The MSLQ score for peer learning was found to be higher on the pre-test as compared to post-test results. A Pearson product moment coefficient was used to assess for correlations between the MSLQ constructs (meta cognitive self-regulation, rehearsal, effort, peer learning) and four nursing skills (Foley insertion, NG placement, enema insertion, sterile gloving). No statistically significant results were noted on the post MSLQ scores; statistically significant results were noted on the pretest for NG insertion (*r*=.49, *p*<.05) and total skill scores (*r*= .59, *p*<.01). Although there was no significant change in MSLQ scores after self-assessment of nursing skills, faculty and students demonstrated high correlations on skill evaluation.

CHAPTER I: INTRODUCTION

Chapter one is an introduction to the research project and will include an introduction of the theoretical components of self-regulated learning, evaluation, and competency. The problem statement, purpose statement and research questions will be introduced along with the definition of terms. Lastly, research assumptions, limitations, and delimitations will be discussed.

One of the chief responsibilities for nursing faculty is to teach nursing skills to students in a way that promotes self-regulated learning through feedback and self-reflection (National Council of State Boards of Nursing, 2005). Students need to move from dependent learning strategies that rely solely on the instructor to independent learning strategies where the student seeks out opportunities for intellectual growth. The move from an instructor-dependent environment can be facilitated by an instructional environment that encourages student participation and engagement. Additionally, students need to develop self-evaluation skills that will enable them to modify their learning to meet academic challenges (Zimmerman, 1990).

Learning nursing skills requires a student not only to learn the steps of the skill but also apply the skills in a variety of settings with a diverse group of people (Jones & Bartlett Learning, ND). Unlike performing a skill in a controlled lab setting, nursing students will be required to perform newly learned skills in a clinical setting. The students will have limited time to rehearse skills prior to performing them on an actual patient. Not only will the student perform the series of steps for the skill, students will also need to apply the theoretical knowledge tied to the skill performance (American Nurses Association, 2010; Jones & Bartlett Learning, ND).

Self-evaluation through reflection is an important step when students perform skills in a laboratory or clinical setting. Self-evaluation assists the student to evaluate his or her skill

achievement and identify what he or she did correctly and areas on which they could improve

(Zimmerman, 1990). Based on his or her self-reflection and faculty/student evaluation, the

student may need further training and practice of the skill in moving towards competence.

Self-Regulated Learning

The chosen framework for this research study comes from Albert Bandura's Self-

Regulation of Learning Theory. Self-regulated learning theory states that students possess the

ability to control all aspects of learning (Bandura, 1977). Students that possess self-regulation

skills have the ability to regulate learning processes from initial assessed learning needs,

advanced planning, and final evaluation of their performance (Bandura, 1977; Zimmerman,

1990). The challenge for faculty is to unlock these self-regulated processes in students so they

will take initiative for their learning. In a traditional model of learning, students come to class

expecting the instructor to provide them everything they need to know. This type of learning has

the potential to create superficial knowledge that generally does not consolidate to long term

memory nor to assist the student in the real-life application of the content (Kihlstrom, 2015).

Many faculty ponder how they can change this mindset and encourage students to be actively

involved in their learning process.

Evaluation

A key ingredient in self-regulated learning and skill achievement is self-evaluation.

According to the American Nurses Association Nursing Scope and Practice (American Nurses

Association, 2010), self-evaluation is an integral part to achieving skill competence and part of a

nurse's scope of practice. Nurses must engage in self-evaluation on a regular basis by identifying

their strengths and areas for growth (American Nurses Association, 2010). The ANA goes on to

add evaluation also involves getting feedback from others such as participating in peer review

and taking action to improve performance (American Nurses Association, 2010).

In nursing education, students learn nursing skills in a lab setting and then faculty

evaluate their skill performance. The traditional method to evaluate skill performance is by using

a skill checklist (DeYoung, 2003). Students demonstrate skill competence by performing a set

number of steps correctly and in the appropriate order (DeYoung, 2003). Faculty provides the

results to the student with little opportunity for student input. Students may feel frustrated with a

process they have no say in, and it makes it hard for them to self-reflect on their deficiencies

(DeYoung, 2003). Although a skills checklist is the traditional method to evaluate skill

performance and competence, the ANA (2010) states no single tool can guarantee competence.

In a study by Seif, Brown, and Annan-Coultas (2013), students found watching video recordings

of themselves performing a health assessment beneficial in gaining proficiency in

communication and clinical skills prior to direct patient care.

Competence

Several frameworks have been established to define competence including the Nursing:

Scope and Standards published by the ANA (2010), specialty nursing scope and standards of

practice, academic and professional models of practice, credentialing standards, Benner's Novice

to Expert Model (2001), and regulatory standards (American Nurses Association, 2010).

Competence is a general term used in many industries to imply a standard level of

achievement based on industry standards. Competence in nursing has many different levels and

meanings depending on the context of which it is used. Competence is important as it is the

standard on how nursing practice is based, and it is expected that nurses remain competent

throughout their careers (American Nurses Association, 2010). Nursing educators are challenged

to provide educated nurses to the workforce who are competent and prepared to provide safe, holistic care. In addition to producing graduates that have achieved a minimal level of competence to practice, nursing educators need to instill/promote the value of life-long learning as a part of continuing competence (American Nurses Association, 2010).

The ANA defines competency as an expected and measurable level of nursing performance (American Nurses Association, 2010). In a nursing context, competency is a level of measure that integrates knowledge, skills, judgment, and abilities based on scientific knowledge (American Nurses Association, 2010). According to the ANA (2010), "Competence in nursing practice must be evaluated by the individual nurse (self-assessment), nurse peers, and nurses in the roles of supervisor, coach, mentor, or preceptor" (p.13).

Benner's model of novice to expert describes competence as a series of levels that a person passes through before he or she is considered an expert (Benner, 2001). Novice, the first level, describes the person that has no experience in the area for which they are to perform (Benner, 2001). The focus of this study will be the novice nursing student.

Problem Statement

Self-regulated learning can be found in a multitude of research articles that covers a wide variety of disciplines. Pintrich, Smith, Garcia and McKeachie (1991) devised the Motivated Strategies for Learning Questionnaire (MSLQ) to study motivated learning and the variables that affect it. This tool has been used by many researchers and adapted for the college student taking a theory course. The tool has also been adapted to evaluate regulated learning as it relates to athletic skill achievement. One aspect that has not been focused on in great depth is the use of the tool to study self-regulated behaviors in novice nursing students in the lab setting.

Other studies explored how the new nurse develops competence through self-assessment strategies and peer assessment (Brimble, 2008; Joy & Nickless, 2008; Kajander-Unkuri, Suhonen, Katajisto, Meretoja, Saarikoski, Salminen & Leino-Kilpi, 2014; Kuiper & Pesut, 2004; Motycka, Rose, Ried & Brazeau, 2010; Yoo & Chae, 2011). While there are studies that address self-assessment of competence and continuing competence of the graduate nurse, there are limited studies that address self-assessment of competence in the novice student. Faculty evaluation of students is well documented in the literature; however, there is a lack of studies evaluating student self-assessment (Burke, Kelly, Byrne, Ui Chiardha, McNichols & Montgomery, 2016).

While there are a plethora of studies on competence measurement in nursing, the focus of many studies tends to revolve around senior level nursing students (Liou & Cheng, 2014; Shepard, 2009). Many researchers have investigated the effects preceptorship has on skill competence in the clinical setting (Shepard, 2009; Wass, Cees Van, Shatzer & Jones, 2001). These studies have examined variables such as placement for the preceptorship and the qualifications of the preceptor. Another focus of studies examines the role of simulation and skill competence. Variables researched for these studies range from student engagement, critical thinking, and transfer of knowledge from the simulated experience into the clinical areas (Cato, 2009; Hansen & Bratt, 2015). Although there are many studies at the senior level, there are far fewer studies on competence development in the novice student.

A second major theme in the literature is the wealth of studies on the new graduate nurse in transition of practice (Shepard, 2009; Tilley, 2008). Studies have investigated what factors help the new graduate move from a novice to competent practitioner (Liou & Cheng, 2014; Marshburn, Engelke, & Swanson, 2009; Rees & Hays, 1996). While there are studies on the new

graduate's transition from novice to expert, there is less information on how to transition novice students to become competent with nursing skills. The focus of this study will be the novice nursing student and skill achievement.

Purpose Statement

The purpose of this quantitative research study was to compare novice Bachelor of Science degree nursing students' self-regulation of learning scores before and after self-assessment of skill achievement through the use of recorded skill performance.

Research Question

What is the relationship between self-assessment of skill achievement and self-regulated learning in first year nursing students in a Midwest baccalaureate nursing program?

Research Question 1

Is there a difference between a student's self-regulated learning scores as measured by the MSLQ before and after self-assessment of skill achievement through the use of recorded skill performance as measured by the MSLQ?

Null Hypothesis 1. There is no difference between a student's self-regulated learning scores before and after self-assessment of skill achievement through the use of recorded skill performance as measured by the MSLQ.

Research Question 2

Is there a difference between faculty assessment and student self-assessment of skill achievement upon review of the recorded skill performance as measured by the clinical skill rubric?

Null Hypothesis 2. There is no difference between faculty assessment and student self-assessment of skill achievement upon review of the recorded skill performance as measured by the clinical skill rubric.

Research Question 3

What is the relationship between a student's self-regulated learning score as measured by the MSLQ and self-assessment of skill achievement as measured by the clinical skill rubric?

Null Hypothesis 3. There is no relationship between a student's self-regulated learning score as measured by the MSLQ and self-assessment of skill achievement as measured by the clinical skill rubric.

Definition of Terms

For the purpose of promoting uniformity and understanding of the study, the terms have been defined to provide clarity**.** The following is a list of terms used in this study:

Baccalaureate Nursing Student. Student that is completing a four-year undergraduate nursing degree program with additional classes in liberal arts, that prepares the student to take the National Council Licensure Examination (NCLEX) exam.

*Clinical Skill Rubric***.** A very specific instructor developed rubric to assess skill achievement through three levels of criteria.

Competence. The ability to perform an expected standard with a desirable result (Schunk, 2004). It is focused on the description of the action (Tilley, 2008).

Motivated Strategies for Learning Questionnaire (MSLQ). A self-report instrument developed to assess motivational orientation and learning strategies of the college student (Pintrich et al., 1991).

Novice. The beginning sophomore nursing student who relies heavily on set rules to understand clinical processes (Sitzman & Eichelberg, 2017).

Self-assessment. The ability of the student to evaluate his/her own skill performance based upon video review of themselves performing the skill using the clinical skill rubric.

Self-regulated learning. The ability of a student to master his or her own learning through active participation in setting goals, organizing thoughts, self-monitoring, and self-evaluation of learning (Zimmerman, 1990) as measured by the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich et al., 1991).

Skill achievement. Mastery of a nursing skill measured by specific criteria that determines competence.

Skill checklist. A list of individual steps that are part of the skill that are typically measured as satisfactory or unsatisfactory.

Assumptions

The assumptions in this research study were those factors that are not discussed in the study; however, were assumed to be true. The following section will highlight the assumptions for this study.

The first assumption was that all faculty that participated in the research process had previous experience evaluating clinical competence. Faculty had experience in a clinical teaching and evaluation of students in the laboratory setting. This was an important aspect to increasing the interrater reliability of the study.

The second assumption was all faculty evaluating skill achievement were registered nurses. The requirements to teach nursing at this university were to have a current nursing license and have a Master of Science in Nursing (MSN) degree.

The third assumption of this study was all students had the ability to learn. In order to be accepted into the School of Nursing, students were in good academic standing and have met admission requirements into the program.

The fourth assumption was all students were motivated to pass the competency evaluation. To be successful in the foundational nursing class, students must be able to demonstrate a satisfactory level of skill achievement as measured by the clinical skill rubric.

The last assumption was students provided honest and truthful responses in their self-evaluation of skill achievement. Students gave honest responses while completing the MSLQ.

Limitations

The limitations are those factors for which the research does not have control. For this study the following limitations were identified and discussed. The first limitation of this study was the small sample size and study location. Nursing classes at the small private university average 25-30 students each semester. The small sample size from one private university will decrease generalizability to other nursing educational units.

The second limitation was the non-randomized convenience sample. The demographics from this university, specific to the school of nursing, limited the diversity of the sample and there was not any randomization of participants.

A third limitation was the availability of students to participate in this study. The Fundamentals of Nursing course is taught once a year which limited access to students to a very specific time-frame.

The last limitation was there being no other faculty evaluators for clinical skill achievement due to the small sample size. Therefore, there was not a second faculty member to validate the evaluation of clinical skills.

Delimitations

The delimitations for this study were the limitations that were set by the researcher to meet the needs of the study.

The first delimitation set by the researcher was the use of sophomore nursing students that learned skills for first time and had no prior experience with the skills taught. Upper level nursing students that had prior experience with these skills could skew the results of the study.

The second delimitation set by the researcher was the instructor developed clinical skill rubric. A specific, carefully constructed rubric decreased subjectivity during the evaluation of skill achievement.

<div align="center">

Conclusion

</div>

Skill achievement that leads to nursing skill competence is a major task of the novice nursing student. Students learn complex nursing skills during their sophomore nursing courses that are transferable to a clinical setting. Skill achievement was demonstrated by the student during lab sessions and measured against an evaluation tool. Faculty generally evaluate the student using the evaluation tool with minimal opportunity for student input. This type of evaluation offers little opportunity for students to self-identify learning deficiencies or subsequent improvement on identified deficiencies.

Self-regulated learning theory supports a model of student self-assessment of skill achievement in order for students to identify gaps in knowledge or performance (Bandura, 1977). Students who are able to regulate their learning have a better chance of learning the skill, and applying the skill to new situations (Bandura, 1977). Video recording of skill performance is one way for the students to watch their own skill performance. Students can evaluate their skill performance and make adjustments as needed prior to final evaluation by the instructor. Video

recording also allows the instructor and student to evaluate the skill simultaneously and further enhance learning. The focus of this study was to examine if self-assessment of nursing skill achievement relates to self-regulated learning in the novice nursing student.

CHAPTER II: LITERATURE REVIEW

Chapter 2 will provide a discussion of the research relevant to self-regulated learning as it relates to nursing skill achievement in the novice nursing student. The theoretical framework will be explored in the first section and will cover the aspects and research of self-regulated learning theory. Performance assessment of skill achievement will be covered in the next section and will include a break-down of faculty, peer, and self-assessment. The third section of this chapter will discuss competence and break down the research done on the topic. Patricia Benner's Novice to Expert theory on nursing competence will be introduced and related to the novice nursing student. Additionally, the chapter will discuss the various instructional strategies presented in the research and how it can impact self-regulated learning and self-assessment in the acquisition of skill achievement.

Theoretical Framework

Self-regulated learning theory, as discussed by Bandura (1977), closely mirrors how students are taught to critically analyze nursing problems. In the nursing process, nurses assess, diagnose, plan, implement, and evaluate identified patient problems (American Nurses Association, 2010). This process is cyclic and ongoing as patient problems are resolved and new ones are identified. Self-regulated learning theory is also a cyclic process; there is a planning or forethought phase, a performance phase, and the evaluation or self-reflective phase (Zimmerman & Schunk, 2001).

In the forethought phase, students regulate their learning process by setting educational goals and developing a strategic plan to achieve those (Zimmerman & Schunk, 2001). One aspect of learning that self-regulated learners possess is motivational control. Students with motivational control have the ability to set goals, adjust to the emotional demands of learning, and have

positive thoughts about their overall abilities (Bruning et al., 2011). Students with these learning

skills are less likely to blame difficulties they encounter during the learning process on others as

compared to unskilled learners (Bruning, Schraw & Norby, 2011; Zimmerman, 1990). Skilled

learners have the ability to adjust their study skills to meet academic demands and challenges

they encounter (Zimmerman, 1990).

 In the performance phase, students shift their focus to self-control and self-observation

learning strategies (Zimmerman & Schunk, 2001). Faculty can play an important role in the

development and encouragement of self-regulated learning through teaching strategies. One way

to motivate students is by providing them options when learning. Offering students choices when

picking out an assignment is one way to provide autonomy and motivate students in the

educational setting (Bruning et al., 2011). By letting the student pick their assignment, the

instructor provides the student incentive to complete the task. A second way to increase

engagement in learning is to foster a feeling of community in the learning setting. Group work

that encourages students to work toward a common goal sets the stage for a collaborative

environment (Bruning et al., 2011). As students work together to achieve an outcome,

relationships are formed and classroom satisfaction is increased.

 A third way to stimulate intellectual independence is through the process of scaffolding

instruction (Bruning et al., 2011). Scaffolding is similar to building a foundation of a house; a

strong layer of bricks must be laid in order to frame the rest of the structure. For the beginning

nursing student, this means starting out with basic nursing skills and modeling correct

techniques. Modeling of basic skills provides an anchor for development of the advanced skills.

Nursing faculty can move students from simple skills to more advanced skills as their

performance levels increase. Hand washing is one example of a basic skill that must be learned and performed correctly before sterile technique can be introduced to the student.

Self-Reflection, the last phase of the cycle, involves self-judgment and self-reaction to learning goals (Zimmerman & Schunk, 2001). Ongoing assessments throughout the educational process lead to an increase in self-regulated learning (Bruning et al., 2011; Nilson, 2013). Students who receive consistent feedback that encourages growth are able to make corrections and regulate learning. Feedback is especially important for students that have insufficient study skills or difficulties with a learning approach (Demiroren, Turan & Oztuna, 2016). Feedback is essential from instructors; however, peer feedback can also be helpful to the learner. Higher ability learners can help lower ability students see gaps in thought processes and provide guidance in making necessary corrections.

Lastly, a component to self-regulated learning is the ability to self-assess one's performance and diagnose any deficiencies (Bruning et al., 2011; Burke & Mancuso, 2012; Jayasree & John, 2013; Nilson, 2013; Robb, 2016). For some students, self-regulated learning comes more naturally while others need guidance on the process (Bandura, 1977). In a study of students in an accelerated second-degree baccalaureate nursing program, students in their third trimester of study reported higher self-regulatory learning processes when compared to second trimester students (Mullen, 2007). This study demonstrates that this skill can be learned by students and fostered by faculty.

Students can self-assess progress through the use of reflection as a way of evaluating performance. Students need to be encouraged on a routine basis to evaluate learning goals by assessing their progress on learning objectives. In a study from Salalah Nursing Institute, students found reflective practice to be useful when it was used as a teaching strategy (Jayasree

& John, 2013). Students in this study felt reflective practice motivated them toward self-directed

learning (Jayasree & John, 2013). Reflection can be as simple as a journal where students are

encouraged to document learning or involve completing a formalized assessment of their

progress.

Problem based learning is a teaching strategy used in medical education to enhance self-

regulated learning. Demiroren et al. (2016) found a positive correlation between self-regulated

learning and problem-based learning in second and third year medical students. This study

indicated that responsibility for learning, self-efficacy and teamwork skills are all related to the

development of self-regulated learning skills. Dunn, Osborne, and Link (2012) conducted a study

of undergraduate nursing students in a pathophysiology course and found ability, effort and luck

were attributes for success and had an influence in self-regulated learning.

The benefits of self-regulated learning have been documented; however, faculty are just

beginning to scratch the surface of possibilities in nursing education (Bruning et al., 2011; Burke

& Mancuso, 2012; Jayasree & John, 2013; Nilson, 2013; Robb, 2016). As students step into their

emerging role as a future nurse, they need to develop self-regulated learning as they will be

required to continually learn new skills and transfer those skills to a clinical setting. Students will

also need to take ownership of their learning needs once they enter professional practice and

move into life-long learning. The most important aspect of any future or current nurse is to

develop and maintain nursing competence (American Nurses Association, 2010) (see Figure 1).
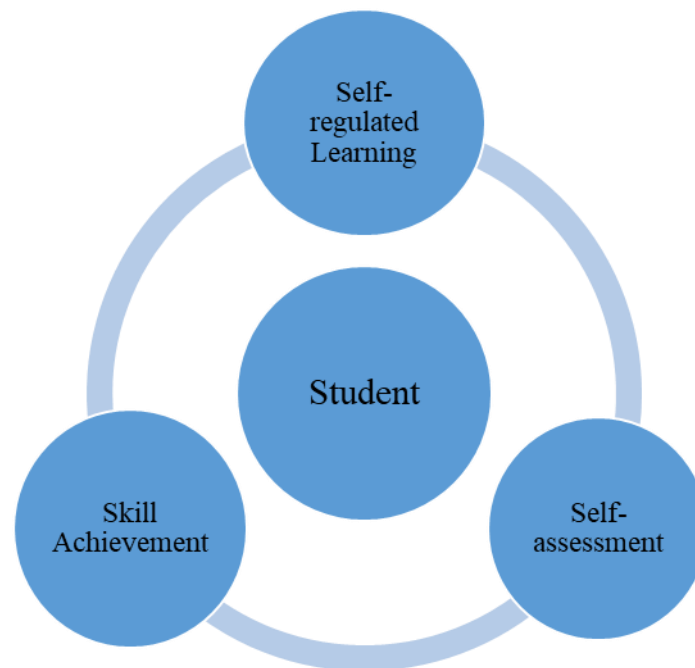
Figure 1. Nursing Skill Competence

Performance Assessment

The evaluation of nursing students in a clinical setting is an important aspect for faculty teaching the next generation of nurses. Although it is a major aspect of their role, it is often not done adequately enough to prepare students for their role as nurses (Tilley, 2008). Students frequently have anxiety when it comes to learning the skills effectively and being able to perform them in the clinical setting (Tilley, 2008; Yoo, Yoo, & Lee, 2010). As faculty set out to find ways to evaluate student performance on clinical skills, the use of a skills checklist is being re-evaluated as a valid measure of student competence (Yoo et al., 2010). Additional measures combined with skills checklists are being considered as a comprehensive assessment measure. Self-assessment with video recording during skill performance is an alternate way for faculty and students to evaluate skill competence, communication skills, and motivation to learn (Yoo et al.,

2010). This form of evaluation allows for rich feedback and visual enhancements to the evaluation process.

Faculty Assessment

One common method of faculty assessment is the standardized skill checklist that lists each individual step of the procedure. Faculty assessment in this manner is a more traditional approach. Students that are assessed in this manner demonstrate successful completion of the skill by accurately performing a set number of steps or critical elements (Gallagher, Smith, & Ousey, 2012). One challenge faculty face when using a checklist is the subjectivity that can occur during the evaluation. When Irish preceptors from a clinical agency were surveyed on a competence evaluation tool, respondents revealed difficulties with understanding the content, terminology, and time constraints (Wass et al, 2001). Although the student successfully completes the skill in a testing setting, competence is not fully achieved until the student can apply the skill in the clinical setting (Gallagher et al., 2012). Many other faculty can attest to the difficulty students have when making the leap from doing a skill in the lab setting to performing in the clinical area (Gallagher et al., 2012).

The Objective Structured Clinical Examination (OSCE), another method that has been used to evaluate student performance, is a popular evaluation tool used for medical students. This assessment method is comprised of a series of stations where students can apply a series of clinical skills to a variety of contexts (Burke et al., 2016). In a study of bachelor of nursing students in Malaysia, researchers investigated clinical competence of practicing nursing students by using the OSCE (Oranye, Ahmad, Ahmad, & Bakar, 2012). Results of the study demonstrated that many years of clinical nursing experience did not guarantee practicing nursing students were competent or have high levels off skill competency (Oranye et al., 2012). Some of the concerns

raised with this faculty centered tool were the subjectivity of the tool and the lack of student

input (Burke et al., 2016). This study supports the notion that competence requires a significant

amount of time to develop, and nurses need continual monitoring of their clinical skills (Oranye

et al., 2012). Although there are limited studies of the OSCE in nursing, this is a viable option to

consider as an evaluation tool for nursing students at any level of their educational experience.

Peer Review

Peer review is another way to encourage student engagement and ownership of learning.

According to Chickering and Gamson (1987), learning is enhanced when it is a team approach

versus independently. Students that work in groups and support each other's learning are going

to increase their involvement in the learning process (Chickering & Gamson, 1987; National

Survey of Student Engagement, 2015; Yoo & Chae, 2011). In addition to increasing student

engagement, students benefit from watching other students. When students watch others perform

the skill, it reinforces their own learning (Boehm & Bonnel, 2010). Peer review enhances team

work among the students and is a vital skill that can carry over to their professional practice.

In the lab setting, students are encouraged to work together to hone their nursing skills.

Students are encouraged to critique each other's work in order to refine their skills. This form of

peer review is an effective tool for students to sharpen skills, improve communication

techniques, and increase their motivation to learn (Chickering & Gamson, 1987; Yoo & Chae,

2011). Once students have perfected their skills, they are ready to demonstrate competence. The

creation of a video recording is one way to show competence of a skill. While each student

creates his/her video recording, his/her lab partner can provide feedback of the performance

(Yoo & Chae, 2011). This feedback can assist students to create a video that demonstrates

competence of the designated skill. In a study of sophomore nursing students who participated in

video assisted peer learning, communication skills and motivation to learn was significantly higher in the intervention group then the control group (Yoo & Chae, 2011). When the peers work together to create and video record each other's skills, both students become engaged in the process (Yoo & Chae, 2011). By providing feedback, peers are able to use self-reflection to modify their own weaknesses, skills, and problem-solving techniques (Yoo & Chae, 2011). Peer review used in this manner can be considered more formative than summative as this type of learning provides opportunities for ongoing growth (Boehm & Bonnel, 2010).

Self-Assessment

Self-assessment of nursing skill performance is another way to increase student engagement in the learning process. Assessment strategies that focus on student learning experiences will help students take responsibility for their own learning (Chickering & Gamson, 1987; Joy & Nickless, 2008; National Survey of Student Engagement, 2015). It is important for students to receive individual support and guidance during their clinical training with a focus on self-reflection to gain a full understanding of nurse's responsibility (Kajander-Unkuri, Suhonen, Katajisto, Meretoja, Saarikoski, Salminen, & Leino-Kilpi, 2014). In a Finish study of nursing students from four universities, it was concluded that the more positively the student assessed his/her readiness for nursing practice, the higher the student self-assessed his/her level of nursing skills (Kajander-Unkuri et al., 2014). Self-assessment is an essential skill that will be an important aspect of the student's progression from student to professional practice.

Narrative reflection is one avenue for students to self-evaluate learning experiences. Narrative reflection can come in the form of a weekly journal that students complete after each clinical or lab experience to portfolios completed throughout the semester. For narrative writing to be effective as a tool, careful guidelines need to be explained up front so the students will get

the most out of the learning activity (Levitt-Jones, 2007). When students are first introduced to narrative reflection, they tend to focus on facts and surface issues instead of deeper emotional or cognitive thought processes (Levitt-Jones, 2007). A student's ability to do reflective journals evolves over time thus it is beneficial to introduce narrative reflection in the first nursing courses (Levitt-Jones, 2007). The goal of the narrative reflection is to not only discuss factual components of their clinical or lab experiences, but also to evoke deeper thoughts or feelings associated with the experience. Narrative reflection can be used in addition to faculty led evaluation to create a more thorough evaluation of the student (Levitt-Jones, 2007). Narrative reflection also assists the faculty to give a more thorough evaluation of the student as reflection reaches deeper into the connections a student is making.

Numerous studies have supported the importance of developing a student's self-assessment skills in preparation for professional practice. Students and clinicians need to gain insight into their own strengths and weaknesses for the provision of safe, effective patient care (Motycka et al., 2010). Gaps between actual competence and perceived competence can lead to patient care safety issues (Marshburn, Engelke & Swanson, 2009). In a study of new nurses taking the Performance-Based Developmental System (PBDS) and the Casey – Fink graduate nurse experience survey, a relationship was found between perceptions of clinical competence and ability to perform in the clinical setting (Marshburn et al., 2009). It can be concluded that students benefit from learning how to self-regulate their own abilities as students build their competence levels. A student's ability to self-regulate learning will be a key factor to developing competence.

When a person's ability to self-assess his/her aptitude is compared to his/her competence level, people with higher competence levels tend to be more critical of their abilities while those

with lower competence levels tend to overestimate their abilities (Motycka et al., 2010). People

who are able to critically reflect on their abilities are able to make the necessary corrections to

their practice by setting future goals for improvement (Schoessler, Aneshansley, Baffaro,

Castello, Goins, Largaespada, Payne, & Stinson, 2008). Self-assessment functions best as

formative process that evolves as students gain news skills and knowledge. This ongoing process

leads to self-regulated learning and prompts the development of metacognitive insights that

strengthens clinical reasoning (Kuiper & Pesut, 2004). Students with lower self-efficacy skills

may need remediation of their skills to build confidence and ability to perform in the clinical

setting (Oetker-Black, Kreye, Underwood, Price & DeMetro, 2014). A self-assessment tool is

one route to help students reflect on areas for improvement.

Concerns have been raised about the validity and reliability of students' self-assessment.

Several studies have been done to develop a rubric that can be used to help the student with self-

evaluation. The Lasater Clinical Judgment Rubric is a tool devised for junior nursing students as

a way to provide students with more personalized feedback (Cato, Lasater & Peeples, 2009).

This tool has four major parts to include; clinical judgment, responding, reflecting, and

interpreting. Each part has subcomponents that are graded on the following scale: beginning,

developing, accomplished, and exemplary (Cato et al., 2009). This rubric can be used by both

students and faculty for a more detailed and objective evaluation (Cato et al., 2009). The rubric is

used once a semester and is well received by both students and faculty. Some benefits of the

rubric as reported by students include an increased sense of autonomy, improved critical thinking

skills, professional growth, and overall improved learning (Cato et al., 2009). This study adds to

the body of knowledge well supported by others that self-appraisal of skill performance includes

self-learning, reflection of practice, and potential areas for growth (Chickering & Gamson, 1987;

Joy & Nickless, 2008; Watts et al., 2009; Yoo, Son, Kim & Park, 2009). A second rubric found

in the literature supports the findings of Cato et al. (2009) and is designed to be completed as the

student is nearing the completion of his/her nursing studies.

Liou and Cheng (2014) developed a tool to measure the perceived clinical competence of

baccalaureate nursing students close to graduation. A total of 340 nursing students were invited

to participate in the two-pronged tool development. After factor analysis, the tool was found to

measure 12 general performance competencies, 12 core nursing skills, 10 professional nursing

competencies, and 6 advanced nursing skills (Liou & Cheng, 2014). Findings from the tool

development and pilot test concluded that the tool was not designed to measure performance-

based competence; however, it is a good measure for perceived self-competence (Liou & Cheng,

2014). Conclusions noted from the pilot test included that students benefit from life-long

learning, competence builds over time and improves with real life experiences, and not all new

nurses are fully prepared for practice at time of graduation (Liou & Cheng, 2014). This research

adds to the body of knowledge that supports self-regulation theory and the importance it plays in

the progression of competence.

Video recording can be used by students for self-assessment of skill competence. Instead

of the instructor standing at "the foot of the bed" while the student performs the skill, one student

performs the assigned skill while a second student video records the skill completion. The

student that does the video recording can provide feedback to the student performing the skill.

This process allows students to practice the skill until the desired skill competency is achieved

and recorded (Joy & Nickless, 2008). Students can also create a video portfolio of their skills as

they progress through the semester as a way for students to reflect on progress they have made

on their nursing skills (Joy & Nickless, 2008). Once the student is satisfied with the video

recording of his/her skill, the student can do a self-appraisal on his/her of competency (Joy &

Nickless, 2008; Musolino, 2006; Watts, Rush, & Wright, 2009; Yoo et al., 2009; Yoo et al.,

2010). The advantage to this process is the student and instructor can watch the video recording

together and compare each other's assessment findings. A skill checklist can be used while

viewing the video recording to make sure all components of the skill are completed.

In a study of physical therapy student's views on the use of video recordings for self-

assessment, it was found that students were motivated to improve skills and increase competence

(Musolino, 2006). One respondent felt the video recording allowed them to see their

performance more accurately and therefore refine skills (Musolino, 2006). A second study

supports the findings of Musolino (2006) and concluded the use of video recording was an

effective teaching evaluation strategy for assisting students to identify their weakness and to be

an active participant in the learning process (Yoo et al., 2010). Nursing students in a pediatric

course also reported benefits of using video recording analysis for self-assessment of skills.

Findings from the study showed that students liked the video format to improve learning and

assess competence (Brimble, 2008). The use of video provides a way for students to see their

abilities; however, it cannot validate the student's ability to be accurate in the assessment and

competence cannot be ascertained by that evaluation alone.

To make self-assessment a valid measure of competence, faculty must know if students

are accurate in their own self-regulated learning and assessment abilities. In a study of freshman

nursing students, Watts et al. (2009) investigated the ability of students to accurately self-assess

their performance after watching a video of themselves performing a nursing skill. The findings

found that students in this study tended to over-rate their abilities as compared to the instructor

ratings (Watts et al., 2009). Similar findings were found in a study of first year pharmacy

students' ability to self-assess communication skills as compared to faculty ratings. As part of

the study, students completed a simulated counseling session that faculty recorded and viewed on

closed circuit television (Mort & Hansen, 2010). Students and faculty evaluated the performance

using a standard checklist immediately after the performance. Students reported having difficulty

evaluating their own abilities and tended to over-rate their abilities as compared to the faculty

rating (Mort & Hansen, 2010). Students were then given the opportunity to watch a video of their

performance and re-evaluate the performance using the same checklist. The video review

increased their perception of skill achievement and they were more accurate in their self-rating

(Mort & Hansen, 2010). Self-assessment can be a powerful learning and assessment tool and the

research supports it as a developmental process. In a concept analysis of competence acquisition,

Hansen and Bratt (2015) determined there still needs to be tools developed to measure the

attributes of skill acquisition. Hansen and Bratt (2015) recommend further studies on transfer of

knowledge from simulated experiences to the clinical setting. Additional research needs to be

done to correlate self-regulated learning behaviors in the lab setting regarding competence

achievement.

Instruction Techniques

The challenges nursing students face when learning a nursing skill are that the skills can

be complex to learn, must be committed to long-term memory, and applied to a variety of

clinical encounters. Many students approach learning a nursing skill by trying to memorize the

individual steps of the skill listed in a "skills checklist". Learning in this fashion makes it

difficult for the students to commit the skill to long-term memory for future recall. Complex

nursing skills must be learned and processed into the long term-memory systems for future use

and application in a variety of clinical settings. For learning of this magnitude to occur, students

must be engaged in the process and be challenged to stretch their creativity and imagination (Grealish & Ranse, 2009). Nursing faculty aware of these challenges have explored a variety of ways to teach and reinforce nursing skill competence. In a national study of occupational nurses' preferred methods of teaching, findings revealed training should use highly engaging teaching methods that incorporate modeling, demonstration, hands-on feedback, and written feedback (Burgel, Novak, Carpenter, Gruden, Lachat, & Taormina, 2014). For any teaching strategy to be effective, it must not only be engaging but also intentional and supported by research.

Findings from the initiative founded by the Robert Wood Johnson Foundation and the Institute of Medicine (Tanner, 2010), students feel ill prepared for their nursing job and dissatisfied with the instruction received in nursing school. Recommendations from the initiative included the following: a need to incorporate active learning strategies, a move away from superficial teaching of content, increase focus on deep learning, and the use of debriefing to maximize learning in the lab and clinical setting (Tanner, 2010). Similar findings were reported in the Carnegie National Study of Nursing Education in the United States as compared to educational programs in Korea (Benner, 2015). This study supported a need to move away from teaching superficial knowledge to a focus on deep learning, emphasis on how to use knowledge, and encouraging multiple ways of thinking in nursing to maximize clinical reasoning (Benner, 2015).

The use of active teaching strategies including simulation and video recordings has gained some attention in recent years as a tool to enhance teaching and evaluation strategies. The creation of expert modeling videos is one teaching strategy that can enhance clinical education. Educational videos created by nurse faculty or clinical partners can teach new skills or serve as a review of previously learned skills. Although observation alone does not guarantee learning or

learning transfer, it can start the process (Franklin, Sideras, Gubrud-Howe, & Lee, 2014). A study by Franklin et al. (2014), found video viewing of skills prior to lab sessions was more effective than voice-over PowerPoint slides, or reading, to prepare students for simulation activities. Expert modeling videos may increase competence during simulation by allowing students to witness nurses performing skills and strategies they use to problem solve during skill performance (Franklin et al., 2014). Through the use of videos, abstract textbook content is framed in a concrete format.

Mobile learning through the use of video-clips is another way students can prepare for clinical labs. Today's mobile technologies provide students a convenient way to access assigned pre-clinical activities. In a study aimed to identify the effects of a mobile based video-clip on class satisfaction, learning motivation, and competence, it was found that mobile video-clips were a successful teaching strategy (Lee, Chae, Kim, Lee, Min, & Park, 2016). Students for this study were divided into a control group that watched a skill video once during the class session while the intervention group had access to the video during class and on a mobile device after the class period (Lee et al., 2016). In addition to increasing competence, students that had access to the video-clips reported less anxiety about making mistakes since they were able to review the skills multiple times (Lee et al., 2016). One benefit of having video-clips on mobile devices is that students can access them at any time during the learning process.

Other studies have not shown as strong of support for video technologies. In a study to discover whether Foley catheter insertion videos delivered by iPod increased student skill competency and self-confidence levels, no significant results were found (Hansen, 2011). Students from the control and intervention group received the same initial instruction followed by a competence check (Hansen, 2011). Students in the control group then had access to Foley

insertion videos via iPods. Two weeks later, both groups retested on the skill with little variation

on the skill noted between groups (Hansen, 2011). It was felt the lack of change between the two

groups could be that both groups performed well on the initial competence check before the

intervention given (Hansen, 2011). Recommendations from this study suggest that when mobile

devices are combined with other teaching strategies, student engagement can be enhanced

(Hansen, 2011). Although significant results were not obtained in this research, the use of video

technologies remains a beneficial teaching and learning support.

One teaching strategy found in the literature was students creating their own videos as an

educational activity (Seif et al., 2013). In this study, doctoral therapy students recorded each

other as they participated in a two simulation activities (a patient interview and physical

examination). Following the creation of their videos, students completed a self-assessment on the

patient interview and physical assessment (Seif et al., 2013). Peer partners then shared their self-

assessments with each other for feedback. Students reacted positively to the exercise and stated it

was beneficial to the development of communication and clinical skills prior to direct patient

care (Seif et al., 2013). Students felt this activity gave them the opportunity to strengthen their

proficiency with skills and to take responsibility for their own learning (Seif et al., 2013). This

type of educational activity moves the student from the observer role to active participant.

How students are prepared for skills competence check-outs can impact how they

perceive their ability to be successful. One strategy developed by Pegram and Fordham-Clarke

(2015) was to utilize peer mentors to assist first year nursing students in learning assigned

nursing skills. The peer mentors, second and third year nursing students, would demonstrate the

assigned nursing skills and first year students would then be able to ask questions about the

procedure (Pegram & Fordham-Clarke, 2015). Following a question and answer session, first

year students would then do a return demonstration of the skill for peer feedback. Both first year

students and peer mentors responded favorably to the activity; peer mentors felt that the activity

provided a nice review of previously learned skills and the first-year students gained confidence

in performing the skills (Pegram & Fordham-Clarke, 2015). Additional gains noted from the

activity included repeated practice of skills for all participants, increased competence of skills,

decreased anxiety, and learning in a non-threatening environment (Pegram & Fordham-Clarke,

2015). Senior students felt activities such as this would help further prepare them for their

mentoring role after graduation (Pegram & Fordham-Clarke, 2015). This research further

supports the benefits of peer mentors, skill practice, and feedback for the development of skill

competence.

     In a study by DeBough (2001), nursing students in a pediatric nursing rotation were

surveyed about their experiences related to performing nursing skills on a pediatric floor and

experiences with simulation. Results of the study indicated that the majority of the students

(80%) felt prior nursing courses prepared them for their pediatric rotations (DeBough, 2001).

One common thread noted from the surveys was the desire to practice and perform skills more

often (DeBough, 2001). Recommendations for teaching based off the results of the study include

checking student competence of skills based on lottery selection, peer evaluation of skill

performance based from a rubric, and the use of video recording for submission to instructor for

evaluation (DeBough, 2001). This finding supports Bandura's Self-Regulation Theory that

students need to self-assess their learning needs and make adjustments to learning in order to be

successful (Bruning et al., 2011). Students who can identify gaps in knowledge are better

prepared to make adjustments needed to be successful.

One school of nursing developed a "skill-a-thon" as a means for freshmen nursing students to practice and demonstrate skill competence with the assistance from senior student mentors (Roberts, Vignato, Moore, & Madden, 2009). Prior to participation in the skill-a-thon, each student was provided a skills checklist for each skill station. Skills selected for the skill-a-thon came from a fundamental of nursing course that included urinary catheter placement, gastrostomy tube feeding, nasogastric tube insertion, physical assessment, injectable medications, and sterile dressing changes (Roberts et al., 2009). Prior to the skill-a-thon, students were encouraged to review the checklist and practice assigned skills. At the skill-a-thon, students were given four hours to rotate through all stations with each station taking approximately 20 minutes to compete (Roberts et al., 2009). Feedback on the program was positive for both freshman and senior students. Freshman students liked the non-threatening environment and the opportunity to work with senior mentors (Roberts et al., 2009). One outcome, from the first skill-a-thon, was senior students needed a chance to review and practice the skills prior to evaluating the freshman students (Roberts et al., 2009). A skill review is one example of ways faculty can encourage students to practice skills and self-identify areas they need further review on.

A second study found in the literature was a mock competency skill assessment. The purpose of the study was to determine if a mock competency skill assessment would have an impact on first-time pass rates for competency check-offs (Payne, Ziegler, Baughman, & Jones, 2015). Prior to the faculty lead competency check-off, students participated in a mock check-off evaluated by peers. Each student rotated through a series of stations to demonstrate his/her competence and then received feedback from his/her peers (Payne et al., 2015). Results of the pilot study indicated an 82% first time pass rate on the instructor lead competency check-off

(Payne et al., 2015). This study supports the use of peer mentoring and assessment as an effective teaching method (Payne et al., 2015).

A third teaching strategy similar to the above studies was a student self-directed skill review. This process was implemented the first week during the junior year of a four-year nursing program. The review process takes about two hours to complete as students work through several stations that included physical assessments, injections, dressing changes, and patient/environmental assessments (Guhde & Conrad, 2011). Students in this study reported they felt the self-directed learning activity was beneficial and helped them prepare for their junior year (Guhde & Conrad, 2011). Results from this research support other studies that incorporate review sessions and peer feedback as a teaching method and formative assessment.

Competence

Competence in nursing has many different levels and meanings depending on the context in which it is used. This concept is important as it is the standard on how nursing practice is based. Competence is a minimum standard that is a professional and ethical obligation to safe practice (Leonardi & Biel, 2012). According to Leonardi and Biel (2012), competence is a shared responsibility among the profession, educators, individual nurses, healthcare organizations, certification agencies, regulatory bodies, and professional organizations. All providers of nursing education must accept responsibility for measuring and documenting competency of their students (American Nurses Association, 2010; Leonardi & Biel, 2012). The current issues faced by nursing schools are to provide graduate nurses to the workforces who are competent and prepared to provide safe care.

In nursing school, competence is generally defined as the successful demonstration of a nursing skill. This demonstration is generally measured against a skill checklist evaluated by a

clinical instructor. Once the students prove competency in the lab setting, they must apply the skill in a clinical setting. Competence, although proven once in a skill check-off, is constantly evolving as a student moves through his/her nursing courses and into professional practice. Benner (2001) described the process of achieving nursing skill competence as a continuum from novice to expert level.

Novice to Expert

Benner (2001) developed a model for nursing practice based off the Dreyfus Model of Skill Acquisition. The Dreyfus Model was originally developed from a study of airline pilots and chess players (Benner, 2001; Dreyfus & Dreyfus, 1980). The model is based on five levels of proficiency that a student passes through to attain skill achievement (Benner, 2001; Dreyfus & Dreyfus, 1980). From the five levels of proficiency outlined in the Dreyfus Model, three general aspects of skilled performance can be identified; the movement from abstract principles obtained from textbook knowledge to concrete experiences, evaluating demand situations as disconnected parts to a complete whole, and movement away from detached observer to active performer (Benner, 2001; Dreyfus & Dreyfus, 1980).

The first level of proficiency, classified as novice, is the beginning stage when a person learns a new skill. The novice is taught the basic rules of the game (Benner, 2001). In nursing the novice can be classified as the new nurse or an experienced nurse working in a new domain. Although new graduates may have a variety of basic nursing skills and knowledge, as they enter into professional practice, they are considered novices once again. Sitzman and Eichelberg (2017) went on to add the novice has a difficult time making the leap from classroom content to clinical practice. This is especially evident in the new nurse that frequently needs to refer to procedure manuals or ask for help before doing a skill.

The next level, advanced beginner, is viewed as a person who can perform basic principles with limited experience (Benner, 2001). This period usually spans the first six months following graduation (Sitzman & Eichelberg, 2017). A distinguishing feature of the advanced beginner is the continued need for guidance as they gain experience. At this level, the nurse may begin to recognize familiar patterns in clinical situations however; he/she cannot set priorities based on these situations (Benner, 2001). A nurse functioning at this level may still seek out mentors in his/her nursing practice.

The competent nurse is the third level of skill acquisition and typically is attained after two to three years of clinical experience (Benner, 2001; Sitzman & Eichelberg, 2017). This nurse can start to see his/her actions in the context of long term goals or plans related to clinical scenarios. Nurses that operate at the competent level are able to organize their day to meet the various needs of their patients but still lack some flexibility when plans need to change suddenly (Benner, 2001). Nurses at the competent level may become easily frustrated when they are given sudden unexpected changes to their workload.

The fourth level, proficient, occurs when the nurse is able to see the big picture as a whole instead of individual parts (Benner, 2001). A nurse at this level can handle complex patients and view all the abnormal labs or test results and frame it as one clinical picture. The proficient nurse can anticipate needs for typical patient events and make adjustments to care as the need arises (Benner, 2001). The proficient nurse is comfortable in the role and spends less time questioning his or her abilities.

Expert is the last level in the Dreyfus Model and is typically achieved after many years of experience (Benner, 2001). A nurse at this level has enough experience to anticipate and react to situations before clinical problems arise. An expert does not rely on rules or algorithms to make

or take clinical action (Benner, 2001; Sitzman & Eichelberg, 2017). This level of expertise is reserved for the nurse with many years of nursing experience with a variety of experiences in that role.

Nursing students just learning the concepts and skills required for nursing fall under the novice level and operate in a concrete, rule driven context (Benner, 2001). According to Benner (2001), students enter a new clinical area as novices as they have limited contextual understanding of textbook knowledge. Novice students tend to follow rules and have limited flexibility in solving problems that fall out of expected norms (Benner, 2001; Sitzman & Eichelberg, 2017). To help transition nursing students at the novice level, novice's benefit from contact with upper level students and nurses who have greater expertise that can serve as role models (Rees, & Hays, 1996). Although novice students benefit from exposure to nurses with experience, students also benefit from authentic assessments and learning environments. In a study of 210 nursing students receiving a specialty medication training module, it was found that students benefit from persistent interaction with authentic virtual learning and assessment environments that are integrated in a supported learning and practice environment (Macdonald, Weeks, & Moseley, 2013). The challenge for faculty is to provide an instructional design that will help the student unlock abstract textbook concepts and apply them to real life clinical situations.

Conclusion

The development of competence in nursing students is one of the major tasks that faculty are faced with in undergraduate nursing programs. Faculty must teach students complex skills that can be learned in the context of a lab setting and then applied to real world applications. Although faculty is in charge of providing learning activities, they also serve as the guide in the

process. The learning is up to the student. Students have the challenge of learning the complex

skills by becoming engaged with the content and learning and moving it to a deeper level. To

transition from superficial learning, students will need to take ownership of learning by assessing

and self-regulating their learning activities. Self-regulated learning will not stop in nursing

school; it will be a life-long process as the student graduates and becomes part of the work force.

CHAPTER III: METHODS AND PROCEDURES

Chapter three presents the research design, setting, participants, and sample size used in the study. Additionally, there is a discussion of data collection procedures, research tools used, and methods used to analyze the data.

Research Design

The quantitative research design chosen for this study was a pre-experimental, one-group design. A one-group experimental design is a type of pre-experimental design that consists of a pretest measure of a single group of subjects followed by a treatment that all subjects receive (Creswell, 2014). Following the treatment, all subjects complete a post-test (Creswell, 2014). The researcher of this study was interested in examining self-regulated learning before and after an intervention that is part of an existing evaluation strategy. Subjects in this study completed a pre and post self-regulated learning questionnaire that measured learning and motivation skills.

Description of Sample/Sample Size

The participants in this study were first-semester nursing students in the Fundamentals of Nursing course. Students in the study served as a convenience sample by virtue of enrollment. A convenience sample is used when naturally formed groups must be used as in the case of course enrollment (Creswell, 2014). The sample size was determined by the number of consenting students enrolled in the fundamentals course. The average enrollment for the course is 25-30 students each fall. Additional inclusion criteria included the following: students were 19 years or older, and enrolled in the course for the first time.

Description of Setting

The setting for this course was a small private liberal arts college in the Midwest. Approximately 1,400 students from across the United States attend this university and participate

in a variety of academic schools (Midland University, 2016). The students for this study were

enrolled in the first nursing course at the sophomore level of a Bachelor of Science in Nursing

(BSN) program.

Data Gathering Tools

MSLQ. The original Motivated Strategies for Learning Questionnaire (MSLQ) is a self-

report instrument containing 81 items that measures 9 learning strategy scales and 6 motivation

subscales (Duncan & McKeachie, 2005). The underlying theory of the MSLQ is the social

cognitive view of motivation and learning strategies (Duncan & McKeachie, 2005). A second

theory underlying the MSLQ is motivation and cognition as a dynamic state in student

performance (Duncan & McKeachie, 2005).

The MSLQ, well established in numerous research studies, has been used to obtain

feedback on students and to help guide decisions about course adjustments (Duncan &

McKeachie, 2005). The tool was first developed in the 1980s to evaluate the "Learning to Learn"

course at the University of Michigan (Duncan & McKeachie, 2005). The MSLQ has been

specifically used for correlational studies on college student learning carried out with over 2000

students during a five-year period (Duncan & McKeachie, 2005). The MSLQ, designed for the

course level, does not have established norms (Duncan & McKeachie, 2005). The Cronbach's

Alpha was used to measure the internal consistency for the 15 scales measured on the MSLQ

(Duncan & McKeachie, 2005). For the motivation scales, the Cronbach's Alpha range goes from

0.62-0.93 and the learning strategy scales range from 0.52-0.79 (Duncan & McKeachie, 2005).

An alpha rating of 0.8 is considered to indicate a high internal consistency value (Patten, 2014).

The MSLQ can be used in its entirety or can be broken up in modular parts to suit the

needs of the researcher (Duncan & McKeachie, 2005). The 81 items MSLQ has two major parts,

motivation and learning strategies. The construct for motivation includes expectancy, value, and affect. Expectancy refers to a student's self-beliefs related to self-efficacy and control beliefs for learning (Duncan & McKeachie, 2005).Value components relates to student engagement on an academic task. Under value components, there are three subscales: intrinsic goal orientation, extrinsic goal orientation, and task value (Duncan & McKeachie, 2005). The last construct under motivation on the MSLQ is affect and relates to test anxiety (Duncan & McKeachie, 2005). This construct is outside of the scope of this research query and will not be used in the instructor modified version of the MSLQ.

The second part on the MSLQ scale pertains to learning strategies with the subscales of cognitive strategies, metacognitive, and resource management (Duncan & McKeachie, 2005). The strategies under this construct include rehearsal, elaboration strategies, and organizational strategies. Rehearsal strategies are the most basic ones that refer to repeating a process over and over to help recall information (Duncan & McKeachie, 2005). Elaboration and organization strategies are more complex and include paraphrasing, summarizing, outlining, and creating tables (Duncan & McKeachie, 2005).

Metacognitive control, the second general category under learning strategies, relates to strategies that help students regulate their own learning (Duncan & McKeachie, 2005). This subscale includes regulating learning activities, monitoring performance, and planning by setting goals (Duncan & McKeachie, 2005).

The last category under learning strategies is resource management which includes time management, study environment, effort regulation, help seeking, and peer learning (Duncan & McKeachie, 2005). These categories represent managing one's study time efficiently, persisting with studies even when difficult, and working with peers to achieve educational goals (Duncan

& McKeachie, 2005). Four sub-components (rehearsal, metacognitive self-regulation, effort, peer learning) of the learning strategy scale was used for this study. The instrument has a 7-point Likert scale ranging from 1= "not at all true of me" to 7= "very true of me" (Pintrich et al., 1991).

     Clinical Skills Rubric. Faculty in the course developed a skill rubric adapted from a standard skill checklist. Skill checklists are a basic way for the evaluator to measure dimensions of a performance (Waugh & Gronlund, 2013). The dimensions are a list of required steps that must be completed to correctly complete the performance (Waugh & Gronlund, 2013). For this evaluation strategy, the instructor modified the standard checklist to a rubric. The rubric, similar to a rating scale, allowed the evaluator to mark the degree to which the skill was performed (Waugh & Gronlund, 2013). The rating on the rubric ranged from two being satisfactory, one as emerging, and zero for unsatisfactory. A rating of satisfactory was achieved when steps were completed in the correct order. The emerging category was for students that completed a step out of order. An unsatisfactory is granted when the step was completely omitted (Waugh & Gronlund, 2013).

     The instructor developed clinical skill rubrics were based off the standard Assessment Technologies Institute (ATI) skill checklists (Assessment Technologies Institute, 2015) that go with the instructional videos for each skill. ATI is an assessment package that students purchase to help them prepare for state boards and professional nursing practice (Assessment Technologies Institute, 2015). The skills chosen for the skill competency check-off were four skills taught in the fundamentals course. Each checklist had been modified from the standard "satisfactory" and "unsatisfactory" rating to the 3-point ranking system.

There was only one faulty member assessing the students on their skill performance; therefore, no inter-rater reliability tests were performed on the clinical skills rubric. Inter-rater reliability is a statistical test used to assess the degree of how different raters give consistent results of a phenomenon (Trochim, 2006b).

Data Gathering Procedures

The first part of data collection took place when the subjects completed the pre-test MSLQ survey on self-regulated learning. This occurred during week two of the semester before participants learned the designated skills (see Table I).

The intervention for the study occurred after students learned the four designated skill in the laboratory. Once students had learned and practiced the skill, student pairs created videos of each other performing the skills. Students recorded their videos until they were satisfied with their performance. During this process, students could provide feedback to each other while they created the video. Students were also encouraged to evaluate their own video performance prior to submitting it to the clinical instructor (see Table I).

Prior to meeting with the clinical instructor, the student and instructor evaluated the videos using a clinical skills rubric. After both parties reviewed and evaluated the video performance separately, the student and instructor discussed the student's performance and compared rubric findings (see Table I).

The last part of the study was the post-test completed by students that consented to the study. The post-test was the same MSLQ that served as the pre-test. The researcher was looking for any changes in student responses between the pre and post-test. The student's self-regulated learning scores and self-assessment scores on the clinical skill rubric were analyzed for any patterns or relationships (see Table I).

Table I

Timeline

Steps of research process	All students	Students giving consent for study	Week in semester
Obtain Consent for study			Week 2
Administer MSLQ		X	Week 2
Conduct interrater reliability tests on Clinical Skill Rubric among faculty in course.			Week 3
Teach nursing skills in lab	X		Week 3-6
Video tape skills—all students	X		Week 7
Students self-evaluate skill achievement using Clinical Skill Rubric	X		Week 8
Faculty evaluate skill achievement using Clinical Skill Rubric	X		Week 8
Faculty/student 1:1 meetings to discuss skill achievement via video-tape	X		Week 9
Administer follow-up MSLQ to students that completed Pre- MSLQ and consent		X	Week 10
Input MSLQ results in SPSS			Week 16
Input Rubric results in SPSS			Week 16
Analyze SPSS results after semester grades in			Week 17 after Final

Planned Data Analysis

Findings from the clinical skill rubric comparison between faculty and student answered the question, "Is there a difference between faculty assessment and student self-assessment of skill achievement as measured by the clinical skill rubric?" A two independent samples t-test was used to evaluate differences between the student and faculty rating. This statistical analysis allowed the researcher to compare the student scores to faculty scores to see if there was a difference between the two groups (Caprette, 2005b).

The MSLQ helped answer the question, "Is there a difference between a student's self-regulated learning scores as measured by the MSLQ before and after self-assessment of skill achievement as measured by the MSLQ?" A Student's t-Test for paired samples was used to test for differences between the pre and post-test MSLQ scores. A paired t test was used to compare quantitative data that was related in a special way (Caprette, 2005a). For this study, each student completed a pre and post MSLQ and the intervention was the self-assessment of their skill video. The intent of the study was to see if there was a difference in the post MSLQ score after self-assessment of skill achievement by video recorded performance.

The last question that was addressed through this research design was, "What is the relationship between a student's self-regulated learning score as measured by the MSLQ and self-assessment of skill achievement as measured by the skill rubric?" A correlational analysis was performed to see if there was any positive or negative correlation between the pre and post MLSQ scores. A Pearson product-moment coefficient was used to assess the level of correlation between different constructs on the MSLQ and four different nursing skills. The statistical measure used to answer this question was the Pearson Product-Moment Correlation Coefficient also known as the Pearson r. The Pearson r statistical analysis allowed the researcher to examine

for a relationship between two quantitative data sets (Patten, 2014). An *r* value of "1.0" is

considered a perfect positive relationship between the two scores while a "-1.0" indicates a

perfect negative relationship (Patten, 2014). The *r* value indicates the strength of the relationship

and the *p* value indicates statistical significance (Burns & Grove, 2011). The following is a

summary of traditional *r* values; less than 0.3 is considered a weak relationship, 0.3 to 0.5 a

moderate relationship, and greater than 0.5 a strong relationship (Burns & Grove, 2011).

Data Quality Measures

Threats to validity can interfere with the reliability of the statistical analysis and decrease

the generalizability of the results to other populations (Creswell, 2014). There are two types of

threats to validity, external and internal (Creswell, 2014). There were two potential external

threats to this project. The first one was interaction of selection and treatment. The other threat

was interaction of setting and treatment. The interaction of selection and treatment occurred due

to the small sample size, convenience sample method, and limited diversity of sample (Creswell,

2014).   These limitations decreased the ability to generalize results to other populations that

have a diverse student body. The interaction of setting and treatment occurred due to the sample

taken from a small, private liberal arts university (Creswell, 2014). The generalizability of this

study is limited to institutions that are small compared to a larger university setting.

Two potential threats to internal validity had been identified with this research procedure,

selection and mortality. Selection threat occurs when subjects of a study have certain

characteristics that could influence the outcomes of the study (Creswell, 2014). The sample for

this study was a convenience sample with no randomization of the participants. This type of

sample limited the diversity of the group and potentially altered the results based on the qualities

of the group.

A second potential threat to internal validity is mortality. This threat occurs when participants drop out of a study for a variety of reasons, which can alter the outcome of the study (Creswell, 2014). This threat could potentially occur when a participant drops the class prior to the end of the semester or withdraws from the study. In this case, all students that started the study, completed the study.

One last consideration is the reliability of the clinical skill rubric. There was only one faculty member completing the clinical skill rubric for each student; thus, there were no threats from inter-rater reliability (Trochim, 2006b). The one possible threat to reliability could be attributed to intra-rater reliability. This occurs when one rater is not consistently doing data collection (McHugh, 2012).

Ethical Considerations

Prior to initiating data collection, approval from the Institutional Review Board (IRB) was obtained. Approval for the research was granted from College of Saint Mary and the university where the study occurred. IRB approval is a necessary step researchers take to protect the rights of the participants (Shamoo & Resnik, 2009).

Several ethical standards were considered when conducting this research. The first consideration was to ensure voluntary participation to the research process. Voluntary participation was important in this study to avoid any participant feeling coerced into participation (Trochim, 2006a). Participants were also allowed to discontinue the study at any time without consequences to the final grade in the course. Informed consent was obtained by the researcher at the beginning of the study and the purpose of the study was provided before consent was obtained. Informed consent is vital to provide protection from risks to study participants (Trochim, 2006a).

The second consideration was be maintaining confidentiality. Confidentiality is protecting the participant from having identifying information disclosed during the research process (Trochim, 2006a). For this study, no demographic information was obtained due to the small sample size and lack of relevance to the study. A second way confidentiality was maintained was through numerically coded MSLQ results that the researcher did not have access to throughout the study. The researcher had a faculty member, not involved with the course, administer the MSLQ and kept the results locked in a separate office. The faculty member that administered the MSLQ coded the MSLQ with a number that correlated to a specific student. At no time did a student name appear on the MSLQ. To keep the skills checklists confidential and anonymous, the research assistant removed names from the skills checklist and entered the scores into a spreadsheet that correlated to a participant's number. Participants were only identified by a number in the spreadsheet and the faculty score was matched to student scores by the research assistant. The post MSLQ was also numbered, coded and placed in a color-coded folder. No student names appeared on the MSLQ or folders. The researcher did not have access to the results of the MSLQ and did not complete data analysis until the conclusion of the course and final grades were submitted. The results of the MSLQ were shredded at the conclusion of the study.

The last ethical principle that was important to address was right to service. Right to service in this study means all students in the class received the educational intervention regardless of participation in the MSLQ pre and posttest. The students in the course were informed that the researcher would not know who participated in the study. This principle is important when the intervention of a study may prove beneficial to all participants (Trochim, 2006a).

Summary

Chapter 3 presented the methodology used for this research design. A pre--experimental, one group research design was used to investigate self-regulated learning before and after an evaluation strategy in sophomore nursing students. The sample was a convenience sample from sophomore nursing students at a small private university. The MSLQ, a well-established tool, was used to measure self -regulated learning. A clinical skill rubric had been developed and was used to evaluate student skill achievement. Data gathering strategies and a timeline was identified for the study. Statistical and data quality measures were delineated to answer the three research questions. Lastly, ethical considerations were in place to protect the rights of the research participants.

CHAPTER IV: RESULTS

Introduction

This chapter presents the results of the quantitative research study. The data collection procedures are described in the first section followed by some general demographics from the convenience sample. The second section of the chapter describes findings of the data analysis for each research question. Lastly a summary of the findings will be presented.

Procedure

During week three of the semester, students in a beginning level nursing course were invited to participate in the study. A brief introduction and purpose of the study was shared with students. Students were then given a color-coded folder with consent forms from two Midwest universities. Once consent was obtained, students completed the Motivated Strategies for Learning Questionnaire (MSLQ). No names were included on the MSLQ, only a number that correlated to the student name on a separate list. The research assistant kept this list separate from the MSLQ forms. The consent forms and questionnaire were then placed back in the color-coded folder and kept in a locked file.

The treatment part of the study occurred during weeks five through nine when students learned nasogastric tube placement, enema administration, sterile gloving, and Foley catheter placement. Once students learned the skills and had time to practice, they worked in pairs to record each other performing each of the four skills. Each student was given a skill checklist evaluation form to complete for each of the four skills. The faculty also completed a skills checklist evaluation form for each student on each of the four skills. During week nine of the semester, the faculty met with each student to compare and discuss the skills checklist

evaluations. The faculty and student also reviewed the videotapes to highlight any areas the student or faculty had questions. The last part of the study occurred during week eleven when students completed the post MSLQ.

Demographics

A total of seventeen students were enrolled in a foundational nursing course the Fall of 2017. All seventeen students enrolled in the class completed the three-prong study for a 100% completion rate. No specific demographics were collected on individual surveys due to the small sample size and desire to preserve the anonymity of the participants. All participants enrolled in the class met inclusion criteria. The participants included females (76%) and males (24%).

Data Analysis

The statistical software used for data analysis was IBM SPSS Statistics 24. This software was chosen since it enabled the researcher to interpret data, analyze trends, and draw statistical conclusions (IBM Corp, 2016). Statistics used for the study included correlation, independent samples *t* test, and paired sample *t* test.

Research Question

To answer the research question, "What is the relationship between self-assessment of skill achievement and self-regulated learning in first year nursing students in a Midwest baccalaureate nursing program?" three sub-questions were analyzed for statistical significance. The results of the findings are presented below (see Table II).

Question 1

"Is there a difference between faculty assessment and student self-assessment of skill achievement as measured by the clinical skill rubric"? To answer the first question, an

independent samples *t*-test was used to compare the means on the student's clinical skill rubric and the faculty scores on the clinical skills rubric. The clinical skill rubric is a three-point rating system with a score of two equaling "satisfactory", one "emerging", and zero "unsatisfactory". For this question, the researcher analyzed the aggregate scores for all four skills and then the individual Foley insertion scores. The Foley insertion scores were teased out separately since this is typically the most difficult skill for students to learn.

Total skill scores. The first independent samples *t*-test was conducted to compare the total clinical skills scores on all four skills for students and faculty. Findings revealed no significant difference in mean skill scores between faculty (*M*= 148.94) and students' *(M*= 149.47) skill scores as measured by the skill rubric *t*(32)= .20, *p*= .84. This indicated there was not a significant difference on how students and faculty rated the student's performance on all four nursing skills combined.

Foley catheter skill scores. A second independent samples *t*-test was conducted to compare the Foley catheter skill scores for students and faculty. Findings revealed no significant difference in mean Foley catheter skill scores between faculty (*M*=56.18) and students' (*M*=54.41) Foley catheter skill scores as measured by the Foley catheter skill rubric *t*(32)= -1.28, *p*= .21. This finding indicated there was no significant difference on how students and faculty rated the students' performance on Foley catheter placement. Mean scores on the Foley catheter skill rubrics did however, come closer to reaching significant levels than total skill scores. Another finding was the mean faculty score on Foley catheter placement is higher than the students' score on Foley catheter placement.

Table II

Summary of Independent Samples t-test

GROUP MEMBERSHIP	N	MEAN	T-TEST	DF	SIG. (2-TAILED)	95% CONFIDENCE INTERVAL OF THE MEAN	
STUDENT TOTAL SKILL SCORE	17	149.4706					
FACULTY TOTAL SKILL SCORE	17	148.9412					
GROUP TOTAL SCORES			.202	32	.841	-4.81315	5.87198
STUDENT FOLEY CATHETER SKILL SCORE	17	54.4118					
FACULTY FOLEY CATHETER SKILL SCORE	17	56.1765					
GROUP TOTAL FOLEY SCORES			-1.281	32	.210	-4.57185	1.04244

Note. Student and faculty skill scores listed in vertical left column. *Significance p< .05**

Question 2

"Is there a difference between a student's self-regulated learning scores as measured by the MSLQ before and after self-assessment of skill achievement as measured by the MSLQ"? A paired samples *t*-test was conducted to evaluate the impact of self-assessment of skill achievement on students' MLSQ scores. The MSLQ utilizes a seven-point Likert scale with a rating system where one equals "not at all true of me" to seven "very true of me". There are several individual constructs within the 81 item MSLQ. The four constructs used for this study includes meta cognitive self-evaluation, rehearsal, effort, and peer learning (see Table III).

Construct-meta cognitive self-regulation. The first construct evaluated was meta cognitive self-regulation. This construct measured regulating activities a student did to improve performance (Pintrich et al., 1991). There was not a significant difference in the means between the pre-test (*M*=58.35, *SD*= 10.67) to post-test (*M*=59.29, *SD*= 10.75) for the meta cognitive self-regulation construct $t(16)= -.51$, $p=0.62$. These findings indicated there was not a significant change in the student mean scores from the pre-test to the post-test given after the intervention.

Construct-rehearsal. The second construct evaluated was rehearsal. As defined in the MSLQ tool, rehearsal is the activation of information in the working memory. Rehearsal helps with attention and the encoding process of new information (Pintrich et al., 1991). For the construct rehearsal, there was not a significant difference in the means from the pre-test (*M*= 22.18, *SD*= 3.59) to the post-test (*M*= 21.71, *SD*= 2.87) MSLQ scores $t(16)= .64$, $p=0.53$. Findings suggest there was no difference on the MSLQ scores between the students' pre-test and post-test for the construct rehearsal.

Construct-effort. Effort was the third construct evaluated for the study. Effort describes how the student applies consistent use of learning strategies to meet goals (Pintrich et al., 1991).

There was not a significant difference in the means on the MSLQ scores from the pre-test ($M=$ 23.24, $SD=$ 4.25) to post-test ($M=$ 22.76, $SD=$ 3.90) for student effort $t(16)=$ .49, $p=0.63$. Findings suggest there was not a significant change in effort as measured by the MSLQ from the pre-test to post-test and the mean scores decreased in the post-test.

       Construct-peer learning. The last construct examined in the study was peer learning. Peer learning as defined in the MSLQ (Pintrich et al., 1991), is the collaboration between peers to clarify and reach insights on course content (Pintrich et al., 1991). There was a statistically significant difference between the mean scores on the MLSQ pre-test and post-test. The mean pre-test scores ($M=$ 14.41, $SD=$ 3.73) were higher than the mean post-test scores ($M=10.88$, $SD=$ 2.83, $t(16)=4.41$, $p<.001$). Although the findings were significant, the researcher hypothesized that the mean scores would be higher on the post-test when compared to the pre-test. The opposite held true, the pre-test had higher mean scores than the post test. This indicates the treatment had no significant positive change in the construct peer learning. The treatment did however, have a negative change in peer learning.

Table III

Paired Samples t-test

GROUP MEMBERSHIP	N	MEAN	95% CI		T	DF	SIG. (2-TAILED)
COGNITIVE PRE-TEST	17	58.3529					
COGNITIVE POST-TEST	17	59.2941					
COGNITIVE PRE-TEST AND POST-TEST	17	-.94118	-4.86726	2.98490	-.508	16	.618
REHEARSAL PRE-TEST	17	22.1765					
REHEARSAL POST TEST	17	21.7059					
REHEARSAL PRE-TEST AND POST-TEST	17	.47059	-1.09439	2.03556	.637	16	.533
PEER LEARNING PRE-TEST	17	14.4118					
PEER LEARNING POST TEST	17	10.8824					
PEER LEARNING PRE-TEST AND POST-TEST	17	3.52941	1.710544	5.34828	4.114	16	.001*
EFFORT PRE-TEST	17	23.2353					
EFFORT POST TEST	17	22.7647					
EFFORT PRE-TEST AND POST-TEST	17	.47059	-1.57892	2.52010	.487	16	.633

Note. MSLQ constructs listed vertically on left column. Significant $p < .05$

Question 3

"What is the relationship between a student's self-regulated learning score as measured by the MSLQ and self-assessment of skill achievement as measured by the skill rubric"? (see Table IV)

Construct-meta cognitive self-regulation. The first construct in the MSLQ investigated for potential relationships was meta cognitive. This construct was compared to four different nursing clinical skills as measured by the clinical skills rubric and using the Pearson product-moment correlation coefficient. A weak correlation ($r= .20$) was noted between the student's Foley catheter skill score and post meta cognitive self-regulation, however, the correlation between the variables was not statistically significant ($r= .20$, $N= 17$, $p= .44$). The r value did display a positive increase from the pre-MSLQ value ($r= .14$). This finding indicates a slight positive change in the correlation value for meta cognitive self-regulation scores on the MSLQ and Foley catheter skill score, but the value did not reach statistical significance.

A second weak correlation ($r= .23$) was noted between student total skill score and post meta cognitive self-regulation but not statistically significant ($r= .23$, $N= 17$, $p= .38$). Although the meta cognitive self-regulation post scores and sterile glove student scores were not statistically significant ($r= .32$, $N= 17$, $p= .21$), the r value demonstrated a medium correlation and was greatly increased from the meta cognitive self-regulation pre-test and sterile glove score ($r= .08$, $N= 17$, $p=.76$). There were not any notable correlations for meta cognitive self-regulation mean scores and mean student scores for enema administration or nasogastric tube (NG) placement.

Construct-rehearsal- The Pearson product-moment correlation coefficient was used to identify possible relationships between rehearsal as measured by the MSLQ and nursing skill

performance as measured by the clinical skills rubric. A medium correlation ($r= .37$) was noted between student Foley catheter skill score and post-rehearsal score, however, was not statistically significant ($r=.37$, $N= 17$, $p=.15$). Another medium correlation ($r= .34$) was noted, this time between student total skill scores and post rehearsal but not statistically significant ($r= .34$, $N= 17$, $p=.19$). The highest correlation ($r= .42$) was the post-rehearsal scores on the MSLQ and the student sterile glove scores as measured by the clinical skills rubric ($r= .42$, $N= 17$, $p=.09$). There were not significant r values for MSLQ-rehearsal and student enema administration scores.

Some interesting findings from the MSLQ construct were noted on rehearsal pre-test scores. A statistically significant correlation was noted between pre-test rehearsal MSLQ scores and student total skill scores ($r=.57$, $N= 17$, $p<.05$). A second statistically significant r value was noted between pre-test rehearsal MSLQ scores and student NG insertion skill scores ($r=.49$, $N=17$, $p< .05$).

*Construct-effort-*No significant correlations were noted for any of the student skills scores on the pre or post-test. The closest value to reaching statistical significance was the student's enema administration skill score and MSLQ post effort construct ($r=.42$, $N= 17$, $p=.10$).

Construct-peer learning. When correlations were run for the construct peer learning, no statistically significant correlations were obtained from any of the four designated nursing skills. The only positive correlation was found for NG insertion ($r=.10$, $p= .71$).

Table IV

Summary of Correlations for MSLQ Construct and Nursing Skill Scores

MSLQ CONSTRUCT	TOTAL SKILL SCORE	FOLEY CATHETER SKILL SCORE	STERILE GLOVING SKILL SCORE	ENEMA ADMINISTRATION SKILL SCORE	NG INSERTION SKILL SCORE
	Pre-test	N=17			
REHEARSAL	r= .59 p= .01*	r= .38 p= .13	r= .44 p= .08	r= .36 p= .16	R= .49 P= .05*
COGNITIVE	r= .24 p= .36	r= .14 p= .59	r= .08 p= .76	r= .21 p= .42	R= .14 P= .58
EFFORT	r= .33 p= .19	r= .26 p=.31	r= .08 p= .78	r= .13 p= .63	R= .34 P=.18
PEER LEARNING	r= .09 p= .73	r= .15 p= .56	r= -.20 p= .45	r= -.20 p= .45	R= .37 P= .15
	Post-test	N=17			
REHEARSAL	r= .34 p= .19	r= .37 p= .15	r= .42 p= .09	r= -.04 p= .88	R= .32 P= .22
COGNITIVE	r= .23 p= .38	r= .20 p= .44	r= .32 p= .21	r= .11 p= .67	R= .08 P= .76
EFFORT	r=.40 p= .11	r=.20 p= .45	r= .25 p= .34	r= .42 p= .10	R= .20 P=.43
PEER LEARNING	**R= -.28 P= .30**	**R= -.15 P= .57**	**R= -.28 P= .27**	**R= -.37 P= .14**	R= .10 P= .71

Note. MSLQ constructs listed vertically on left column and nursing skill names listed in top horizontal row. Pearson product-moment correlation coefficient list as r and significance level listed as p. Significance *p*< .05*

Results Summary

Three questions were investigated in this study to look at the relationship between self-assessment of skill achievement and self-regulated learning in first year nursing students. The first question assessed if there was a difference between faculty and student assessment of skill achievement. The results demonstrated no statistical significance on how students and faculty rated skill performance. Findings did show faculty rated students higher on Foley catheter placement than students rated themselves.

The second question assessed if there was a difference in self-regulated learning scores before and after self-assessment of skill achievement. Overall, no statistical significance was found on the students' MSLQ scores before and after students rated their performance on four nursing skills. Of the four different MSLQ constructs investigated, peer learning indicated a statistical significant result on the pre-test as compared to the post. This showed students rated peer learning on the MSLQ higher before self-assessment of their skills.

Lastly, the relationship between a student's MSLQ score and the student's self-assessment of skill achievement was investigated. Although there were a few medium correlations noted between the MSLQ constructs and clinical skills, none of the post MSLQ results were statistically significant. The construct effort demonstrated the largest increase in the "r" factor from the pre-test to post-test for sterile gloving. This construct also came closest to a statistically significant "p" value.

CHAPTER V: DISCUSSION AND SUMMARY

Chapter 5 will present the purpose of this study, research design, a discussion of each question and correlation to the literature. The theoretical framework will be presented and correlated to the research findings along with implications to education and suggestions for future research studies.

This study set out to explore self-regulation of learning scores in BSN students before and after self-assessment of nursing skill achievement through the use of video recorded skill performance. The overarching research question for the study was," What is the relationship between self-assessment of skill achievement and self-regulated learning in first year nursing students in a Midwest baccalaureate nursing program?" To answer this question, three sub-questions were posed, researched, and analyzed, to reach a conclusion. A quantitative pre-experimental, one-group designed was used to probe the research question.

Research Questions and Interpretation

Question 1. "Is there a difference between faculty assessment and student self-assessment of skill achievement as measured by the clinical skill rubric"? An independent samples *t*-test was conducted to compare how students and faculty rated clinical skill performance. A faculty developed clinical skill rubric was used to assess student performance on four different skills. The four skills included Foley placement, nasogastric tube insertion, enema administration, and donning sterile gloves. Each student watched the videos of his/her skill performance and scored his/her performance using the skill rubric. The skill rubric had a three-point rating scale; "2=satisfactory", "1= emerging", and "0= unsatisfactory". Scores were tallied by the research assistant on the four skills performed and entered into SPSS by the faculty. Each student had a total skill score from their self-assessment and a total score from the faculty assessment. The

results of the *t*-test were not statistically significant for a difference in the means for the two

groups. The findings from statistical analysis indicated faculty and student ratings were similar

when all skill scores were combined and students were able to accurately assess their clinical

skill performance when they viewed their performance by video recording. One possible reason

for similar ratings is students were provided a copy of the skill rubric prior to the making their

videos. In a study on skills assessment using video analysis, Brimble (2008) suggested the use of

a standardized assessment tool and faculty feedback. Kachingwe, Phillips, and Berling (2015)

also felt the greatest benefit to student learning was a detailed rubric and sufficient faculty

feedback.

Similar results were obtained when the researcher isolated Foley catheter skill assessment

ratings between the faculty and student. There was not a significant difference on how the

students rated their own performance on Foley catheter placement compared to the faculty rating

of the same skill. This too demonstrates students were able to accurately assess their own skill

performance when it came to inserting a Foley catheter while watching a videotape of their

performance. It was noted however, mean faculty rating scores were higher overall than the

mean student rating and came closer to reaching significant differences that other skill scores. In

this study, students rated themselves lower on the Foley catheter skill compared to the faculty.

This could be because of the high level of difficulty with Foley catheter insertion. One study of

pharmacy students found people with low levels of competence tend to overestimate their

abilities while students with high levels of competence tend to be more critical of themselves, as

compared to faculty evaluations ((Motycka et al., 2010).

   Question 2. "Is there a difference between a student's self-regulated learning scores as

measured by the Motivated Strategies for Learning Questionnaire (MSLQ) before and after self-

assessment of skill achievement as measured by the MSLQ?" A paired *t*-test was used to test the means of the student's MSLQ scores before and after self-assessment of their skill performance to see if the intervention made a statistical difference in the scores. The first construct analyzed was metacognitive self-regulation. Metacognitive regulation on this questionnaire measures planning, monitoring, and regulating learning processes (Pintrich et al., 1991). There was not a statistical difference found in the pre and post-test means which indicates the intervention did not have a significant influence on the student's MSLQ scores. The student's pre-test mean was slightly lower than the post-test mean. Although it is not a significant finding, overall, students rated themselves higher on the post-test and possibly gained a small benefit from the intervention. According to Burke and Mancuso (2012), nurses must develop metacognitive skills in order to self-regulate nursing practice and apply skills in unfamiliar clinical environments.

Rehearsal, the second construct measured on the MSLQ, is the process of reciting and memorizing information to be learned (Pintrich et al., 1991). Findings from the construct reveal no statistically significant difference between the student's pre and post MSLQ scores. Additionally, the student mean score was slightly higher on the pre-test which indicates students' perceptions of rehearsal strategies did not change following the self-assessment of skill performance. This finding may be due to students already using rehearsal as a study strategy prior to their first nursing course. Rehearsal still remains an important aspect of learning as indicated in a survey of third year nursing students in a pediatric nursing course (DeBough, 2001). These students responded nursing skills should be repeated, reviewed, and reinforced through more practice in order to feel competent (Collins, 2007; DeBough, 2001).

The third construct, effort regulation, is the ability of one to complete goals regardless of distractions or difficulty (Pintrich et al., 1991). Once again there was not a statistically significant difference on how students viewed their effort regulation on the pre and post MSLQ. The mean for this construct was also slightly higher on the pre MSLQ than the post MSLQ indicating self-assessment of skill performance had no significant effect on student perceptions of effort regulation. This finding suggests student perceptions of effort regulation actually decreased from the pre-test to post-test.

Peer learning, the ability to collaborate with others during the learning process, was the last construct investigated (Pintrich et al., 1991). The findings for this construct were statistically significant however, not in the direction the researcher hypothesized. Mean scores were higher on the pre-test compared to the post-test. A student's perception of peer learning actually decreased after doing a self-assessment of skill performance. This finding could be due to the tool asking questions more specific to theory courses versus clinical lab. Although students worked together to create the videos, students did not complete the actual skill together. Yoo and Chae (2011) found peer feedback was an effective means to stimulate active participation and interest in a topic. Additionally, peer review was an effective way to increase student communication skills and increase motivation (Yoo & Chae, 2011).

Question 3. "What is the relationship between a student's self-regulated learning score as measured by the MSLQ and self-assessment of skill achievement as measured by the skill rubric"? A correlational study was done to assess for relationships between the four different MSLQ constructs and the four nursing skills that students created videos for. The statistical analysis used for computation was Pearson product-moment correlational coefficient. The

researcher was looking for MSLQ constructs that had a positive correlation with the students'

skill rubric scores.

   Meta cognitive self-regulation. Meta cognition is basically thinking about thinking and

how it is regulated (Pintrich et al., 1991). One question posed in the survey is "I ask questions to

make sure I understand the material I have been studying in class" (Pintrich et al., p 23, 1991).

Of the four nursing skills that were investigated, the total skill scores ($r=.20$) and Foley skill

scores ($r= .23$) demonstrated weak correlations. Neither of these values were statistically

significant. These findings could be related to the tool selected to measure meta-cognition asks

questions from a theory lens instead of a clinical one.

   Sterile gloving scores indicated a medium correlation ($r= .32$) with meta-cognitive self-

regulation. Although this did not reach statistical significance, the correlation value had

increased from the pre MSLQ score ($r=.08$). This may indicate sterile gloving is a process that

requires a student to think about the process in order to complete all the steps correctly. Doing

the steps incorrectly causes contamination of the gloves and forces the student to start the

process over.

   Rehearsal. Rehearsal, the second construct investigated under the MSLQ, is the process

of memorizing steps from a list or terminology (Pintrich et al., 1991). One example of a question

is, "when I study for this class, I practice saying the material to myself over and over again"

(Pintrich et al., p 19, 1991). Total skill scores ($r=.34$), Foley insertion skill scores ($r=.37$),

nasogastric intubation ($r= .32$), and sterile gloving ($r= .42$) demonstrated a medium correlation to

rehearsal. No statistical significance was achieved and an inverse correlation was noted for

enema skill scores ($r= -.04$). Positive correlations for the medium strengths suggest students

relied on rehearsal techniques when learning the skills for their video creation. During the

process of video creation, students were strongly encouraged to practice and redo the skill video

as often as necessary to provide a satisfactory product.

There were two statistically significant positive correlations on the pre-MSLQ constructs

that were not specifically part of this study. Total student skill score ($r=.57$) and nasogastric

intubation scores ($r= .49$) had large to medium correlations to rehearsal. This indicates that

rehearsal is a study strategy that students are familiar with and rely on to learn class content.

Effort. Effort, the third construct from the MSLQ, was evaluated for potential

correlations with the four different student skill scores. Although there were no statistically

significant correlations noted among the four nursing skills, enema administration came the

closest ($r=.42$, $N=17$, $p= .10$). There was a medium correlation ($r=.42$) between the MSLQ

construct effort and the nursing skill enema administration. The medium correlation could be

attributed to how a student views effort. A student that approaches learning in a consistent

manner may feel they have control over their learning environment. Enema administration is one

example of a nursing skill that students may find easier to master as long as they are consistent in

their approach and follow the steps of the skill rubric.

Peer learning. When evaluating the MSLQ construct peer learning and the four nursing

skills, no statistically significant results were noted on the Pearson r value. There were also no

positive small to medium correlations noted. Three of the four skills demonstrated an inverse

correlation indicating that as the clinical nursing scores went up, scores on the MSLQ construct

peer learning decreased. This finding indicates peer learning was not viewed as a part of learning

a new skill. As discussed in chapter two, students may not see the relationship between peer

collaboration and their own achievement of success.

Although significant correlations were not noted on the four MSLQ constructs and the four nursing skill video evaluation scores, there were small to medium strength correlations noted between several measures. Students did benefit from the opportunity to self-evaluate their performance. Students need to start the self-evaluation process early in the curriculum and refine this process throughout the program (Mort & Hansen, 2010; Watts et al., 2009).

Correlation of Results to the Literature and Theoretical Framework

Self-regulated learning is a way to increase metacognitive clinical thinking and the development of nursing skills (Kuiper & Pesut, 2004). This study used self-regulation theory as the theoretical framework to explore factors involved with learning nursing skills. There are three main processes involved in the development of self-regulated learning; planning, performance, and self-evaluation (Zimmerman & Schunk, 2001). The MSLQ was the tool used to measure the student's perceptions of their planning strategies when learning new and difficult course material. The second question addressed if there was a change in the student's MSLQ scores after creating and self-evaluating his/her nursing skills. Of the four MSLQ constructs measured, meta-cognition was the only construct that improved slightly from the pre-test to post-test; however, this construct did not reach statistical significance.

The second process in self-regulated learning theory is performance (Zimmerman & Schunk, 2001). There was not a specific question that addressed this process however, question one did investigate for differences between faculty and student assessment of the student performance on four different skills. The results did indicate that students and faculty had a strong correlation on how they evaluated the nursing skills. This could be attributed to students re-doing their videos until they had a product they were satisfied with (Nilson, 2013; Schunk, 2004).

The last process in self-regulated learning theory is self-evaluation (Zimmerman & Schunk, 2001). This is the process that closes the cyclic loop of self-regulated learning (Zimmerman & Schunk, 2001). Question three focusses on student self-evaluation and self-regulated processes. Although there were not any statistically significant correlations between the MSLQ constructs on self-regulation, several small to medium correlations existed. According to Kuiper and Pesut (2004), self-evaluation is an important aspect to the development of critical clinical reasoning. Levett-Jones (2007) adds, self-assessment is the critical analysis of one's own performance and essential to self-directed, life-long learning.

Implications/Recommendations for Education

Student self-evaluation is an important aspect of student learning as indicated in the literature. Video evaluation is one teaching strategy that enables a student to view his/her performance of a skill. The use of video recording was found to be an effective way to increase learning motivation and confidence in second year nursing students (Lee et al., 2016). Others have also found there is a strong correlation between a student's self-assessed readiness for practice and his or her self-assessed level of competence Kajander-Unkuri et al., 2014). This strategy could be started in the first nursing course and continued throughout the program. The goal would be to develop student self-evaluation skills and build confidence in their ability to perform skills (Joy & Nickless, 2008; Swapna, 2007). Self-evaluation is an ongoing process that follows a nurse throughout one's nursing career and an important aspect of professional skill building (Cato et al., 2009).

The creation of videos of skill performance also moves the student away from rote learning or memorization of steps to higher level thinking. Grealish and Ranse (2009) in a study

of first year nursing students, found students learn best when they are engaged in the work and given a specific task to complete.

As popularity of simulation continues to grow in nursing, video is a great tool that can be incorporated into the debriefing process. Students would have a chance to see themselves perform during the simulation and self-evaluate areas for improvement (Yoo et al., 2010). Mort and Hansen (2010) add that students who watch video recordings of themselves performing skills can build competence and interpersonal skills. One respondent in a study by Musilino (2006) stated the use of video allowed them to accurately see themselves and refine the skill.

A good rubric establishes the groundwork for students to self-evaluate (Dennison, Rosselli & Dempsey, 2015). One suggestion for the future would be to revise the clinical skill rubric to reflect a way to document students who break sterile technique. The current rubric has a list of sequential steps that need to be completed but there was not an area to specify if sterile technique was maintained.

Limitations of this Study

Several limitations occurred within the study. This first limitation was the sample chosen. A convenience sample was chosen from an entry level nursing course in a small Midwestern private university. A convenience sample is the least desirable selection process as it prevents randomization of the participants (Creswell, 2014). This sample was chosen due to ease of access to participants and the ability for the researcher to conduct the intervention with participants. Typically, the entry level nursing course averages 25-30 students in the fall semester. This year the student numbers dropped and the researcher only had 17 potential participants. This smaller number affects statistical analysis and can cause misleading statistical results. In correlational

studies of less than 30 participants, moderate correlations may not reach statistical significance (Pallant, 2005).

A second limitation was the use of a very specific nursing course. A fundamentals nursing course was selected for this study. This course is the first nursing course in the curriculum at the university. Selection of a specific course can limit generalizability outside of the study. Results found in a beginning level nursing course may not transfer to an upper level course. As defined by Polit and Beck (2008), generalizability is the criterion used to determine the ability to apply research findings to other populations and settings.

The third limitation was location of the study. A small private university has demographics that might be different from a larger public university. The size of this university is approximately 1400 students including undergraduate and graduate numbers. A typical public university may have over 20,000 students in just undergraduate programs. Class sizes also tend to be smaller compared to larger universities. A second feature of the location is a Midwestern state. Students from the Midwest may have different viewpoints on education and learning compared to coastal regions. Students from the Midwest may also have demographic differences than some of the more ethnically diverse regions. All of these limitations can affect the ability of the researcher to accurately generalize the results to other settings (Polit & Beck, 2008).

A fourth limitation was the introduction of a new clinical skills rubric for this study. The previously used rubric contained a "satisfactory" versus "unsatisfactory" rating scale. For purposes of creating a 3 point evaluation scale, the researcher transformed the scale to "satisfactory", "emerging" and "unsatisfactory". This tool had not been used to evaluate students in the past and was not pilot tested for interobserver reliability since only one faculty member

completed the scoring on the rubric. According to Patten (2014), interobserver reliability is important to establish to ensure consistent results among different observers. Although only one faculty observed the students completing the skills in this study, interobserver reliability would be important to test if this study were to be replicated in the future. Additionally, reliability of the scores could be affected by just having one faculty member completing the scoring.

Lastly, the four nursing skills were taught in three weeks. Findings may be different if the nursing skills were taught and practiced over a longer period.

Future Research

Several opportunities for further research stem from this foundational work. The first possibility would be to use a different tool in place of the MSLQ. While the MLSQ has been used by several other researchers, it may not be specific enough for a clinical measurement. The MSLQ questions tend to steer the participant toward theory/classroom type statements. Future studies may a revised tool to reflect questions more specific to clinical practice.

A second opportunity for further research would be to use multiple sites. This study used only one cohort from one site. The use of multiple sites would increase the generalizability of the results (Polit & Beck, 2008). Generalizability could also be increased by including nursing programs from both small and larger schools of nursing plus expanding the study outside of the Midwest regions. This study population was from a small private university.

A third opportunity would be to include upper level nursing course. This could be accomplished by using the video-tape technologies and self-evaluation strategies in all nursing courses that teach clinical skills. The current study is a snap-shot in time of a specific cohort and does not reflect changes in self-evaluation strategies as a student progresses through the

curriculum. A longitudinal study would be one way to evaluate changes to the study group over time. A longitudinal study would also allow the researcher to evaluate transfer of skills from the practice lab into the clinical setting (Oetker-Black et al., 2014).

Lastly a qualitative or mixed methods study might be beneficial to get rich student feedback that cannot be collected in a quantitative study. The student experience in his/her own words would add another dimension to the result to paint a clearer picture. A mixed methods approach would provide a stronger understanding of the research question and catch different dimensions of the study (Creswell, 2014).

Summary

Faculty in nursing school face the challenge of teaching nursing skills in an approach that will lead to competence. Students will be challenged to take this learned skill and apply it in a clinical setting. This study explored aspects of self-regulated learning and the relationship to self-evaluation of skill performance. Findings suggest the students did not change their views on self-regulated learning strategies after self-assessment of skill performance. When faculty and student nursing skills scores were measured, the faculty and the students demonstrated a strong correlation on assessment of nursing skill scores. Furthermore, several constructs for self-regulated learning demonstrated small to moderate correlations with nursing skill performance. These findings suggests self-regulated learning plays a role in learning and achieving skill competence.

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Appendix A

Motivated Strategies for Learning Questionnaire Manual

The following questions ask about your motivation for and attitudes about this class. Remember there are no right or wrong answers, just answer as accurately as possible. Use the scale below to answer the questions. If you think the statement is very true of you, circle 7; the statement is not at all true of you, circle 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

1	2	3	4	5	6	7

Not at all true of me   Very true of me

1. In a class like this, I prefer course material that   1 2 3 4 5 6 7
   really challenges me so I can learn new things.

2. If I study in appropriate ways, then I will be able   1 2 3 4 5 6 7
   to learn the material in this course.

3. When I take a test I think about how poorly I am   1 2 3 4 5 6 7
   doing compared with other students.

4. I think I will be able to use what I learned in this   1 2 3 4 5 6 7
   course in other courses.

5. I believe I will receive an excellent grade in this class. 1 2 3 4 5 6 7

6. I'm certain I can understand the most difficult   1 2 3 4 5 6 7
   material presented in the readings for this course.

7. Getting a good grade in this class is the most satisfying 1 2 3 4 5 6 7
   thing for me right now.

8. When I take a test I think about the items on other parts 1 2 3 4 5 6 7
   of the test I can't answer.

9. It is my own fault if I don't learn the material in this course. 1 2 3 4 5 6 7

Motivated Strategies for Learning Questionnaire Manual

1	2	3	4	5	6	7

Not at all true of me   Very true of me

10. It is important for me to learn the course material in   1 2 3 4 5 6 7
    this class.

11. The most important thing for me right now is improving   1 2 3 4 5 6 7
    my overall grade point average, so my main concern in this
    class is getting a good grade.

12. I'm confident I can learn the basic concepts taught in this.   1 2 3 4 5 6 7

13. I can, I want to get better grades in this class than most   1 2 3 4 5 6 7
    of the other students.

14. When I take test I think of the consequences of failing.   1 2 3 4 5 6 7

15. I'm confident I can understand the most complex   1 2 3 4 5 6 7
    material presented by the instructor in this course.

16. In a class like this, I prefer course material that arouses   1 2 3 4 5 6 7
    my curiosity, even if it is difficult to learn.

17. I am very interested in the content area of this course.   1 2 3 4 5 6 7

18. If I try hard enough, then I will understand course material.   1 2 3 4 5 6 7

19. I have been an easy, upset feeling when I take an exam.   1 2 3 4 5 6 7

20. I'm confident I can do an excellent job on the assignment   1 2 3 4 5 6 7
    and tests in this course.

21. I expect to do well in this class.   1 2 3 4 5 6 7

Motivated Strategies for Learning Questionnaire Manual

1	2	3	4	5	6	7

Not at all true of me   Very true of me

22. The most satisfying thing for me in this course is trying   1 2 3 4 5 6 7
     to understand the content as thoroughly as possible.

23. I think the course material in this class is useful to learn.   1 2 3 4 5 6 7

24. When I have the opportunity in this class, I choose course   1 2 3 4 5 6 7
     assignments that I can learn from even if they don't
     guarantee a good grade.

25. If I don't understand the course material, it is because   1 2 3 4 5 6 7
     I didn't try hard enough.

26. I like the subject matter of this course.   1 2 3 4 5 6 7

27. Understanding the subject matter of this course is   1 2 3 4 5 6 7
     very important to me.

28. I feel my heart beating fast when I take an exam.   1 2 3 4 5 6 7

29. I'm certain I can master the skills being taught in this class.   1 2 3 4 5 6 7

30. I want to do well in this class because it is important to   1 2 3 4 5 6 7
     show my ability to my family, friends, employer, or others.

31. Considering the difficulty of this course, the teacher,   1 2 3 4 5 6 7
     and my skills, I think I will do well in this class.

Motivated Strategies for Learning Questionnaire Manual

Part B. Learning Strategies

The following questions ask about your learning strategies and study skills for this class. Again, there is no right or wrong answers. Answer the questions about how you study in this class as accurately as possible. Use the same scale to answer the remaining questions. If you think the statement is very true of you, circle 7; if a statement is not at all true of you, circle 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

1	2	3	4	5	6	7

Not at all true of me   Very true of me

32. When I studied the readings for this course, I outline the material to help me organize my thoughts.   1 2 3 4 5 6 7

33. During class time I often miss important points because I'm thinking of other things.   1 2 3 4 5 6 7

34. When studying for this course, I often try to explain the material to a classmate or friend.   1 2 3 4 5 6 7

35. I usually study in a place where I can concentrate on my course work.   1 2 3 4 5 6 7

36. When reading for this course, I make up questions to help focus my reading.   1 2 3 4 5 6 7

37. I often feel so lazy or bored when I study for this class that I quit before I finish what I planned to do.   1 2 3 4 5 6 7

38. I often find myself questioning things I hear or read in this course to decide if I find them convincing.   1 2 3 4 5 6 7

39. When I study for this class, I practice saying material to myself over and over.   1 2 3 4 5 6 7

40. Even if I have trouble learning the material in this class, I tried to do the work on my own, without help from anyone.   1 2 3 4 5 6 7

Motivated Strategies for Learning Questionnaire Manual

1	2	3	4	5	6	7

Not at all true of me   Very true of me

41. When I become confused about something I'm reading   1 2 3 4 5 6 7
    for this class, I go back and try to figure it out.

42. When I study for this course, I go through the readings   1 2 3 4 5 6 7
    and my class notes and try to find the most important ideas.

43. I make good use of my study time for this course.   1 2 3 4 5 6 7

44. If course readings are difficult to understand, I change   1 2 3 4 5 6 7
    the way I read the material.

45. I try to work with other students from this class complete 1 2 3 4 5 6 7
    the course assignments.

46. When studying for this course, I read my class notes in the 1 2 3 4 5 6 7
    course readings over and over again.

47. When a theory, interpretation, or conclusion is presented in   1 2 3 4 5 6 7
    class or in the readings, I try to decide if there is good supporting
    evidence.

48. I work hard to do well in this class even if I don't like what 1 2 3 4 5 6 7
    we are doing.

49. I make simple charts, diagrams, or tables to help me   1 2 3 4 5 6 7
    organize course material.

50. When studying for this course, I often set aside time to   1 2 3 4 5 6 7
    discuss course material with a group of students from the class.

51. I treat the course material as a starting point and try to 1 2 3 4 5 6 7
    develop my own ideas about it.

52. I find it hard to stick to a study schedule.   1 2 3 4 5 6 7

Motivated Strategies for Learning Questionnaire Manual

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Not at all true of me   Very true of me

53. When I study for this class, I pull together information from different sources, such as lectures, readings, and discussions.

1 2 3 4 5 6 7

54. Before I study new course material thoroughly, I often skim it to see how it is organized.

1 2 3 4 5 6 7

55. I ask myself questions to make sure I understand the material I have been studying in this class.

1 2 3 4 5 6 7

56. I try to change the way I study in order to fit the course requirements and the instructor's teaching style.

1 2 3 4 5 6 7

57. I often find that I have been reading for this class but don't know what it was all about.

1 2 3 4 5 6 7

58. I ask the instructor to clarify concepts I don't understand well.

1 2 3 4 5 6 7

59. I memorized keywords to remind me of important concepts in this class.

1 2 3 4 5 6 7

60. When coursework is difficult, I either give up or only study the easy parts.

1 2 3 4 5 6 7

61. I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying for this course.

1 2 3 4 5 6 7

62. I try to relate ideas in this subject to those in other courses whenever possible.

1 2 3 4 5 6 7

63. When I study for this course, I go over my class notes and make an outline of important concepts.

1 2 3 4 5 6 7

Motivated Strategies for Learning Questionnaire Manual

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Not at all true of me   Very true of me

64. When reading for this class, I try to relate the material   1 2 3 4 5 6 7
    to what I already know.

65. I have a regular place set aside for studying.   1 2 3 4 5 6 7

66. I try to play around with ideas of my own related to   1 2 3 4 5 6 7
    what I am learning in this course.

67. When I study for this course, I write brief summaries   1 2 3 4 5 6 7
    of the main ideas from the readings and my class notes.

68. When I can't understand the material in this course,   1 2 3 4 5 6 7
    I ask another student in this class for help.

69. I try to understand the material in this class by making   1 2 3 4 5 6 7
    connections between the readings and the concepts from the
    lectures.

70. I make sure that I keep up with the weekly readings   1 2 3 4 5 6 7
    and assignments for this course.

71. Whenever I read or hear an assertation or conclusion   1 2 3 4 5 6 7
    in this class, I think about possible alternatives.

72. I make lists of important items for this course   1 2 3 4 5 6 7
    and memorize the lists.

73. I attend this class regularly.   1 2 3 4 5 6 7

74. Even when course materials are dull and uninteresting,   1 2 3 4 5 6 7
    I managed to keep working until I finish.

75. I tried to identify students in this class whom   1 2 3 4 5 6 7
    I can ask for help if necessary.

Motivated Strategies for Learning Questionnaire Manual

1	2	3	4	5	6	7

Not at all true of me   Very true of me

76. When studying for this course I try to determine   1 2 3 4 5 6 7
    which concepts I don't understand well.

77. I often find that I don't spend very much time   1 2 3 4 5 6 7
    on this course because of other activities.

78. When I study for this class, I set goals for myself   1 2 3 4 5 6 7
    in order to direct my activities in each study period.

79. I get confused taking notes in class, I make sure   1 2 3 4 5 6 7
    I sort it out afterwards.

80. I rarely find time to review my notes or readings   1 2 3 4 5 6 7
    before an exam.

81. I try to apply ideas from course readings in other   1 2 3 4 5 6 7
    class activities such as lecture and discussion.

Appendix B

Foley Catheter-----Inserting an indwelling retention catheter

Steps	Satisfactory Completes step correctly, in the correct order 2	Emerging Completes step however out of correct order 1	Unsatisfactory Omits step 0	Comments
1. Identify Patient and verify order, hand hygiene				
2. Place supplies at bedside				
3. Position patient				
4. Cover patient's abdomen with towel or bath blanket				
5. Pull top linens under bath blankets down to foot of bed				
6. Push blanket and gown up toward patient's abdomen				
7. Assess need for perineal cleaning				
8. Have patient move ankles up and to side				
9. Open catheterization kit				
10. Place sterile drape between patient's legs				
11. Apply sterile gloves				
12. Open packet of antiseptic solution and pour it onto cotton balls				

13. Prepare lubricant			
14. Attach prefilled syringe to catheter's balloon port			
15. With non-dominant hand---spread labia minora to expose urinary meatus			
16. With dominate hand---clean mucosa with one downward stoke of each antiseptic-soaked cotton ball			
17. Hold catheter with sterile dominate hand while stabilizing labia majora.			
18. Lubricate catheter			
19. While patient bears down---Insert catheter into urethra			
20. Advance catheter until you see urine			
21. Advance catheter an additional 1 to 2 inches			
22. Release labia & hold onto catheter with non-dominant hand			
23. Inflate balloon and gently pull catheter			
24. Change gloves/hand hygiene			

25. Secure catheter to patient's thigh			
26. Adjust gown			
27. Attach drainage system below level of patient's bladder to bed.			
28. Remove bath blanket			
29. Adjust linens			
30. Make sure patient is comfortable			

COLLEGE OF
SAINT MARY

STUDENT NURSING SKILL ACHIEVEMENT THROUGH SELF-REGULATED LEARNING

Invitation.
Dear Nursing Student,
You are invited to take part in this research study. The information in this form is meant to help you decide whether or not to take part. If you have any questions, please ask Cynthia DeLanie MSN, RN.

Why are you being asked to be in this research study?
You are being asked to participate in this study because you are a sophomore nursing student enrolled in The Fundamentals of Nursing course.

What is the reason for doing this research study?
Skill achievement that leads to nursing skill competence is a major task of the novice nursing student. Students learn complex nursing skills during their sophomore nursing courses that are transferable to a clinical setting. Skill achievement is demonstrated by the student during lab sessions and measured against an evaluation tool. Faculty generally evaluates the student using the evaluation tool with minimal opportunity for student input. This type of evaluation offers little opportunity for students to self-identify learning deficiencies or subsequent improvement on identified deficiencies.

 The purpose of this study is to compare novice Bachelor of Science degree nursing students' self-regulation of learning scores before and after self-assessment of skill achievement through the use of recorded skill performance.

What will be done during this research study?
The first part of the study will involve participants completing the Motivated Strategies for Learning Questionnaire (MSLQ) that is a self-report tool to assess motivational and learning strategies of the college student.

The second phase of the study occurs when students learn clinical skills in the lab. All students will complete the second phase regardless of participation in the study.

The third phase will occur when students make video-tapes of themselves performing the assigned clinical skills. All students will complete the third phase regardless of participation in the study.   *Participant Initials* _____

The fourth phase of the study will occur when students and faculty evaluate the student skill performance via the video tapes. All students will complete this phase regardless of participation in the study.

The last phase will occur when participants complete the post MSLQ survey.

Timeline

- Week 2 Complete the MSLQ during clinical time
- Week 3-6 Learn clinical skill
- Week 7 Create video-tape of skills
- Week 8 Self-evaluate skill performance
- Week 8 Faculty evaluate student video-tape of skills
- Week 9 Meet with clinical faculty to review clinical skill achievement.
- Week 10 Complete the follow-up MSLQ
- Week 16 Once final grades posted, investigator will input MSLQ scores into SPSS

What are the possible risks of being in this research study?

There are no known risks to you from being in this research study.

What are the possible benefits to you?

You are not expected to get any direct benefit from being in this research study.

What are the possible benefits to other people?

The possible benefit of this study will be to find new evaluation strategies that encourage student participation and ownership in the process.

What are the alternatives to being in this research study?

Instead of being in this research study you can choose not to participate.

What will participation in this research study cost you?

There is no cost to you to be in this research study.

Participant Initials _____

Consent Form - PAGE THREE

Will you be paid for being in this research study?

You will not be paid or compensated for being in this research study.

What should you do if you have a concern during this research study?

Your well-being is the major focus of every member of the research team. If you have a concern as a direct result of being in this study, you should immediately contact one of the people listed at the end of this consent form.

How will information about you be protected?

Reasonable steps will be taken to protect your privacy and the confidentiality of your study data.

The only persons who will have access to your research records are the study personnel, the Institutional Review Board (IRB), and any other person or agency required by law. The information from this study may be published in scientific journals or presented at scientific meetings but your identity will be kept strictly confidential.

What are your rights as a research participant?

You have rights as a research participant. These rights have been explained in this consent form and in The Rights of Research Participants that you have been given. If you have any questions concerning your rights, talk to the investigator or call the Institutional Review Board (IRB), telephone (402)-399-2400.

What will happen if you decide not to be in this research study or decide to stop participating once you start?

You can decide not to be in this research study, or you can stop being in this research study ("withdraw") at any time before, during, or after the research begins. Deciding not to be in this research study or deciding to withdraw will not affect your relationship with the investigator, or with the College of Saint Mary (also add any other sites to this statement, if needed).

You will not lose any benefits to which you are entitled.

If the research team gets any new information during this research study that may affect whether you would want to continue being in the study, you will be informed promptly.

Participant Initials _____

Documentation of informed consent.

You are freely making a decision whether to be in this research study. Signing this form means that (1) you have read and understood this consent form, (2) you have had the consent form explained to you, (3) you have had your questions answered and (4) you have decided to be in the research study.

If you have any questions during the study, you should talk to one of the investigators listed below. You will be given a copy of this consent form to keep.

If you are 19 years of age or older and agree with the above, please sign below.

Signature of Participant: Date: Time:

Participant Initials _____

My signature certifies that all the elements of informed consent described on this consent form have been explained fully to the participant. In my judgment, the participant possesses the legal capacity to give informed consent to participate in this research and is voluntarily and knowingly giving informed consent to participate.

Signature of Investigator: Date:

Authorized Study Personnel

Principal Investigator: Cynthia S DeLanie MSN, RN Phone: xxx-xxx-xxxx

Secondary Investigator: Christi Glesmann EdD, MSN, RN   Phone

Appendix D

MIDLAND
U N I V E R S I T Y

Delanie, Cynthia <delanie@midlandu.edu>

Question about MSLQ
9 messages

Delanie, Cynthia <delanie@midlandu.edu>   Sun, Sep 18, 2016 at 10:31 AM
To: mslq@umich.edu

To whom it may concern,

My name is Cynthia DeLanie, Associate Professor of Nursing at Midland University and doctoral student at College of
Saint Mary. As part of my research, I am highly interested in self-regulated learning as it relates to skill acquisition. I
would like to use the "Motivated Strategies for Learning Questionnaire" authored by Paul R. Pintrich and Elisabeth V. De
Groot to measure self-regulated learning in sophomore nursing students. Since my research is specific to the clinical
setting and skill achievement (competence), I would also like permission to make a few alterations in the wording to
reflect learning in the clinical setting. Please let me know if this is possible and who I need to contact.

Thanks for your time,

Cynthia DeLanie MSN, RN

--
Cynthia DeLanie MSN, RN
Associate Professor
Midland University
delanie@midlandU.edu

Katie Schmitt <katielsc@umich.edu>   Mon, Sep 19, 2016 at 8:47 AM
To: "Delanie, Cynthia" <delanie@midlandu.edu>

Hi Cynthia,

You have permission to use and modify the MSLQ to your needs. Please just remember to cite the use of this
questionnaire appropriately.

Regards,
Katie

Katie Schmitt
Program Coordinator
Combined Program in Education and Psychology
University of Michigan
(734) 763-0680

[Quoted text hidden]

Duncan, Teresa <Teresa.Duncan@icfi.com>   Mon, Sep 19, 2016 at 10:37 AM
To: "Delanie, Cynthia" <delanie@midlandu.edu>, "mslq@umich.edu" <mslq@umich.edu>

Hi Cynthia. The Pintrich & De Groot measure is the junior high school version of the MSLQ – it sounds like you
want the college version of the instrument. The MSLQ is in the public domain and so you are welcome to use it for
your research, as long as appropriate attribution/citation of the instrument is made (and any modifications to the