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Cultivating Confidence: Creating a Flipped Classroom Environment

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Cultivating Confidence: Creating a Flipped Classroom Environment

by

Hallie H. Barnett

A thesis submitted to the faculty of
Gardner-Webb University Hunt School of Nursing
in partial fulfillment of the requirements for the
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Abstract

The purpose of this pilot study was to examine if the application of the flipped classroom teaching method versus traditional lecture in new hire hospital nursing orientation played a role in practicing nurses' self-confidence to competently practice at the patient's bedside. By exploring two different teaching methods in orientation, a correlation would be determined to recognize self-confidence levels with the nurse's ability to use policy, procedure, and equipment when responding to a medical emergency in a new facility. The research study was conducted using a convenience sample at a community hospital during nursing orientation which occurred consistently twice per month. Data collection followed for a total of six new hire orientation weeks with nurses working in medical, surgical, and emergency departments. The nurses who received traditional lecture functioned as the control group, whereas the nurses who received the flipped classroom served as the experimental group. The Confidence Scale (C-Scale) evaluation tool was used as the measurement method for this research study. The overall mean and standard deviations (SD) of the participants in the flipped classroom method scored higher cumulatively in self-confidence levels with a mean of 3.8 (SD .85), whereas the traditional lecture had a mean of 3.62 (SD .72). A t-test was analyzed, and p-values for each of the five individual questions were all greater than the level of significance at .05. Therefore, there was not a statistically significant difference acknowledged in the flipped classroom method as compared to the traditional lecture for this research study.

Keywords: flipped classroom, self-confidence, nursing orientation, and practicing nurses

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Table of Contents

CHAPTER I: INTRODUCTION

Introduction.....	1
Significance.....	1
Problem Statement.....	2
Purpose.....	3
Theoretical/Conceptual Framework.....	4
Research Question	5
Definition of Terms.....	5
Summary.....	6

CHAPTER II: RESEARCH BASED EVIDENCE

Research Based Evidence	7
Flipped Classroom in Nursing Education.....	8
Sections of the Flipped Classroom Experience	9
Flipped Classroom and Nursing Students.....	10
Flipped Classroom and Self-Confidence	11
Nursing Orientation and Self-Confidence	12
Influence of Benner’s Theory.....	14
C-Scale Evaluation Tool.....	14
Summary.....	16

CHAPTER III: METHODOLOGY

Methodology.....	17
Study Design.....	17
Setting and Sample	18
Design for Data Collection	19

Measurement Method	21
Data Collection Procedure	22
Protection of Human Subjects	22
Data Analysis	23
Summary	23
CHAPTER IV: RESULTS	
Results.....	24
Sample Characteristics.....	24
Major Findings.....	24
Summary.....	28
CHAPTER V: DISCUSSION	
Discussion.....	29
Implication of Findings.....	29
Application to Theoretical Framework.....	30
Limitations	31
Implications for Nursing.....	31
Recommendations for Future.....	32
Conclusion	33
REFERENCES	34
APPENDICES	
A: CTE Diagram.....	38
B: Benner's 5 Stages of Skill Aptitude.....	39
C: Debriefing Tool.....	40
D: Simulation Case Scenario	4
E: Permission to Use C-Scale.....	42

List of Tables

Table 1: Descriptive Statistics of C-Scale Evaluation Responses	25
Table 2: T-test for Equality of Means.....	27

List of Figures

Figure 1: Histograms of Cumulative Means for Teaching Methods	26
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CHAPTER I

Introduction

With the ever-changing world of healthcare and the diverse conditions of the patient population in the hospital setting, the demands on the nurse are great. These matters make it essential for the nurse to be confident in practice to deliver safe, competent, quality patient-centered care. The pursuit of growing self-confidence in nursing professionals at a healthcare facility should begin in the orientation process. There is a necessity for clinical nurse educators to design orientation curriculum that meets the needs of nursing staff in new environments.

Significance

The nurses who attend initial new hire orientation at a healthcare facility come from various backgrounds with varying levels of nursing experience, from new graduate to 30+ years of practice. Many of the participants of orientation are not new to the profession of nursing but are new to the healthcare facility and nursing unit. There are many reasons why nurses begin a new job opportunity, but with change come many stressors. The nurse educators facilitating new hire orientation must be sure they are utilizing the most effective educational approaches to engage a diverse group of nurses in the learning process.

It is crucial to find new, engaging ways for education while nurses are still in training to ensure not only competency, but also confidence while caring for a patient at the bedside. With the lecture method, about 80% of presented trainings are forgotten within 8 weeks according to Sadeghi, Sedaghat, and Sha (2014) due to one-way communication, fast forgetting of the issues, and inactiveness of the students. If the educator allows learners to

be actively involved in their training, nursing staff can easily adapt and remain confident to act in the most competent manner possible when they encounter similar situations in the clinical field.

Problem Statement

Although nursing orientation can be an exciting start to a new career, it has also been considered to be one of the most stressful times. The complexities of the current healthcare world have encouraged nurse educators to seek ways to better prepare nursing professionals for the realities of clinical practice. A major problem in training nursing professionals is the utilization of non-active education for clinical preparation and practical skills. This style of teaching makes it difficult for the learner to implement critical thinking, problem solving, and a clinical decision path (Zarifsanaiey, Amini, & Saadat, 2016). An increased interest in innovative teaching modalities has propelled the flipped classroom to the forefront of nursing education.

The flipped classroom is a blended learning approach where learners essentially prepare for the content prior to class through video, PowerPoint, or assigned readings and participate in interactive activities such as case studies, simulation, and discussion regarding the content during the classroom time. Knowledge levels of learning must occur prior to class so that application and analysis are the focus during the time together with the educator and other learners.

Ward, Knowlton, and Laney (2018) found in their research study:

The purpose of the flipped classroom is to provide students with opportunities to connect the didactic and clinical aspects of nursing education through active learning experiences for the purpose of clarifying data, building knowledge, growing clinical judgement skills,

understanding the importance of interdisciplinary collaboration, and enhancing critical thinking and problem-solving skills, with the goal of ultimately providing safe, effective patient care. (p. 169-170)

A key topic covered in hospital nursing orientation is the policies and procedures regarding response to a medical emergency such as a Rapid Response or a Code Blue. According to Williams et al. (2016), “it has been shown that nurses—both recent graduates and highly skilled, experienced nurses—respond with anxiety during a code” (p. 8). By implementing an active educational design such as the flipped classroom method to provide similar content in nursing orientation, students are given an opportunity to become participants of their own learning by using hospital policies and procedures, demonstrating technical skills, operating hospital equipment, and building confidence with absolutely no danger to the patient.

Purpose

The purpose of this MSN research study was to examine if the application of the flipped classroom versus traditional lecture in new hire nursing orientation played a role in learners’ self-confidence to practice competently at the bedside during a realistic situation. Numerous studies have been conducted to indicate an increase in self-confidence with the use of the flipped classroom among students in nursing school and various healthcare disciplines; however, there has been few research studies directed toward the impact of self-confidence on the practicing nurse using this teaching method. One can determine whether or not there is a correlation between the use of the flipped classroom in nursing orientation and higher self-confidence levels in the nurse’s ability to use hospital policies, procedures, and equipment when responding to a medical

emergency by using the C-Scale evaluation tool (see Appendix A for CTE diagram).

Theoretical/Conceptual Framework

The theoretical framework for this research study was developed from Patricia Benner's Novice to Expert model. Her theory, which was first published in 1984, applies the Dreyfus model of skill acquisition to nursing and outlines five stages of skill aptitude: novice, advanced beginner, competent, proficient, and expert (McEwen, 2014). Benner's Novice to Expert model emphasizes the importance of clinical nursing as the foundation of the design. It outlines the skill, time, and experience needed to pass through the five stages during the career as a professional nurse (see Appendix B for Benner's Five Stages of Skill Aptitude).

The central concepts of Benner's model are those of competence, skill acquisition, experience, clinical knowledge, and practical knowledge (McEwen, 2014). Benner's model provides a framework for the learner to acquire the required skills to competently practice and for the institute to provide the necessary resources to develop the professional nurses' skill level. Her premise behind the model is that proficiency develops over time, but "it is the experience of real-world nursing practice that provides opportunities for progressive development of expertise" (Candela, 2016, p. 219).

Even though Benner's work has been tested in clinical practice, research, and administration, it has also been successful in nursing education such as capstone experiences, internships, and orientation programs (Candela, 2016). Nurse educators are able to demonstrate Benner's domains of nursing practice in new hire orientation through identifying as a helping role, managing rapidly changing situations effectively, monitoring therapeutic interventions, and ensuring quality of health care practices

(McEwen, 2014). The nursing staff, whether they be a new graduate or a seasoned nurse, can feel trust and confidence in themselves to be competent with patient care at the bedside when nurse educators create an active, positive learning space during the orientation experience.

Benner's theory examines nursing competency as an ongoing educational opportunity based on individual experiences, exposures, and time in clinical practice. It is the role of the nurse educator to provide learning activities for assessment of performance in didactic and clinical-like settings, so the nurse can not only remain knowledgeable but also feel confident and proficient in their work. The Novice to Expert model of Benner's theory ultimately strives to improve safe, quality patient-centered care by creating valuable learning opportunities for nurses, growing career development, and improving confidence of nursing professionals.

Research Question

Do newly employed hospital nurses who receive the flipped classroom teaching method in new hire nursing orientation have higher self-confidence levels than those who receive traditional lecture to competently respond to a medical emergency in the hospital?

Definition of Terms

Active learning has been defined as “any instructional method that engages students in the learning process” (Prince, 2004, p. 223). This research study compared two different educational learning approaches. Traditional lecture is a teaching tool used to deliver content by giving a presentation that bridges verbal communication with writing and new media technologies (Phillips, 2016). The flipped classroom is a teaching approach in which direct instruction moves to the individual learning space, and the

group space is transformed into a dynamic, interactive learning environment (Bergmann & Sams, 2014). The flipped classroom may also be termed inverted learning or the inverted classroom throughout this research study.

The correlation of self-confidence in nursing orientation was examined throughout the research study. Self-confidence was conceptually defined as the belief in one's abilities to accomplish a goal or task (Crisp, Taylor, Douglas, & Rebeiro, 2012). According to Grundy (1993), "the term confidence has been used interchangeably with self-efficacy" (p. 6). For the purposes of this study, new hire orientation is operationally defined as initial on-boarding at a healthcare facility held over several days for registered nurses and licensed practical nurses starting a new job at the organization.

Summary

It takes time to become familiar with distinctive roles and responsibilities in a new work environment. Nurse educators in new hire orientation have a duty to facilitate learning in a creative, active way for understanding hospital policies, procedures, and equipment. The teaching strategy used for a learning experience, such as responding to a medical emergency, could correlate with improving the confidence level of a nurse to competently perform in a realistic clinical situation.

CHAPTER II

Research Based Evidence

The purpose of this research study was to explore if the use of the flipped classroom as opposed to traditional lecture in nursing new hire orientation increased nurses' self-confidence when responding to a medical emergency, such as a Rapid Response or a Code Blue. Even though the flipped classroom has been used in other healthcare disciplines, this teaching method is a progressive way of learning for the practicing nurse. Research on the use of the flipped classroom in hospital orientation with professional nurses is very limited which highlights an important knowledge and skills gap. The sources used to conduct this literature review included Cumulative Index for Nursing and Allied Health Literature (CINAHL), Lippincott Williams & Wilkins, Elsevier, Science Direct, and Education Resources Information Center (ERIC). Journal articles utilized for the literature review were published nine years ago to the current year. The searched key words included flipped classroom, self-confidence, nursing orientation, nurse educators, and practicing nurses.

Traditionally, nursing courses have been delivered using a lecture format where the educator teaches at the front of the classroom, the students passively receive information, and questions are saved for the conclusion of the class. However, “stand-alone lectures are insufficient to meet the needs of today's learners or prepare student nurses to meet today's professional standards” (Ward, et al., 2018, p. 163). Innovative teaching strategies are critical to integrate into nursing education, specifically orientation. The literature found in the systematic review by Tan, Yue, and Fu (2017) conveys “that

one of the primary components of effective teaching is student engagement and that engagement is critical for learning” (p. 193).

Flipped Classroom in Nursing Education

According to Beom et al. (2018), “the flipped classroom is an effective teaching method for changing students from passive to active learners and creating integrative educational strategies” (p. 7). In the paradigm of the inverted classroom, students gain exposure to new material outside of the classroom and then use the scheduled class time to assimilate their knowledge and skills through active learning exercises. Nurse educators must be able to partner with the students to facilitate their learning. Through flipped learning, “faculty are able to take on the role of ‘clinical instructor’ and guide the students through realistic learning experiences” (Bristol, 2014, p. 46). These clinical-like activities can provide nurses with more opportunities for developing critical thinking, competency, and confidence.

Furthermore, Bristol (2014) states:

One of the great benefits of flipping the classroom is that the classroom can become a clinical learning environment. By helping the students pursue knowledge and comprehension (the two lowest levels of cognitive learning) prior to coming to class, they can spend class time focusing on application and analysis. These experiences allow students to use their new-found discoveries to meet the needs of simulated patients (case studies, role play, YouTube videos, mannequins, etc.). Class time is no longer reserved for acquiring knowledge. Now, the learner can use knowledge to grow their understanding of deeper concepts. (p. 45)

Sections of the Flipped Classroom Experience

A typical inverted learning environment combines three components: lecture material as the homework assignment, interactive activities during classroom time, and a debriefing session at the end of class. In the flipped classroom setting, students learn the foundational content outside of the classroom by reading assignments, reviewing slideshow lectures, or by watching teacher-prepared videos, and then students engage in activities during the classroom time that enhance the foundational information by role play, case scenarios, games, simulation, or group discussion (Ward et al., 2018). The debriefing portion is a core element where participants evaluate their own knowledge, skills, and attitudes regarding the learning module.

Developing competency and confidence in performance-based training “requires accumulating hands-on experience treating actual patients and cannot be based on simple knowledge transfer, memorization, or written tests” (Beom et al., 2018, p. 2). Nurse educators have the freedom to create learning experiences similar to health care interactions by meeting the needs of simulated patients, whether it be by case studies, role play, mannequins, etc. (Bristol, 2014). The literature review completed by Ward et al. (2018) found that students in 11 of the 12 studies “acknowledged that the flipped classroom in-class activities were either worth-while expenditures of time and effort or the activities enhanced interaction and engagement” (p. 169).

An advantage of debriefing is the interaction the nurse receives between peers and educators; “learners can provide peer feedback to each other and respond to feedback they receive, encouraging a dialogue on the learner’s work and focus on the process rather than on the final product. It also gives learners practice at assessing their own

work” (Tainter, Wong, Cudemus-Deseda, & Bittner, 2017, p. 190). The flipped classroom model provides learning opportunities for nurses to foster knowledge, promote collaboration, build self-confidence, and grow in skills such as clinical judgement as well as critical thinking.

Flipped Classroom and Nursing Students

It is pivotal to examine the impact of the flipped classroom within the population of nursing students due to little research on this teaching method for practicing nurses. According to Kim and Jang (2017), “high level of knowledge, ample practice opportunities, and the development of competence as a hospital team member are essential elements of nursing education” (p. 330). Their study entailed randomizing students by the experimental group where simulation-based education via the flipped learning method was provided, and the control group received traditional simulation-based education. The study results showed that “the flipped learning group received higher scores on academic achievement, teamwork skills, and satisfaction levels than the control group, including the areas of content knowledge and clinical nursing practice competency” (Kim and Jang, 2017, p. 329).

By providing participatory training to nursing students, learners are able to explore the knowledge in an involved way, solve problems, and use critical thinking skills. In the study by Zarifsanaiey et al. (2016), “findings suggest that the use of integrated training methods (simulations and critical thinking strategies) as an active learning and student-directed strategies increase students' practical learning in a safe and controlled environment” (p. 6). The researchers recommended the use of integrated

teaching practices in training in order to enhance the clinical performance of nursing students.

Flipped Classroom and Self-Confidence

Lacking confidence as a professional in the healthcare field can be detrimental to patient care because it compromises safety and quality. The flipped classroom model has been implemented in many healthcare disciplines in recent years to determine if it plays a role in learner's self-confidence in the work environment. The research completed by Tainter et al. (2017) found there was a statistically significant improvement in medical residents' perceptions of confidence with teaching echocardiography after implementing the flipped classroom model at Massachusetts General Hospital in the Surgical Intensive Care Unit. The researchers also found improvement in post-intervention scores of knowledge, perceived usefulness, and likelihood of use of the skills with this teaching method (Tainter et al. 2017). In another study at Stanford University in California, researchers found statistically significant progression in 29 pediatric interns' knowledge, confidence, and attitudes of using clinical practice guidelines by implementing the inverted teaching method (Louden, Peterson, Gribbem, & Blankenburg, 2016).

Self-confidence and competency coincide in the profession of nursing. According to Omer (2016), "nurses must have high level of self-confidence in their abilities to conduct appropriate health assessments, perform effective intervention, participate as an effective team member, and recognize patient deterioration events" (p. 136). During an evidence-based nursing (EBN) course at a medical center in northern Taiwan, researchers completed a study investigating knowledge and self-efficacy where the control group received training by traditional lecture while the experimental group received the flipped

classroom approach. EBN knowledge and self-efficacy of the experimental groups' scores were more elevated than the control groups' during the post-course evaluation (Tsung-Lan, Wang, Monrouxe, Yu-Chih, & Chen-li, 2019). Self-confidence plays a major role in how one approaches tasks and challenges in the healthcare setting. Additionally, "it is evident in the literature that the self-confidence can be increased via flipped classroom teaching" (Tsung-Lan et al., 2019, p. 9).

Nursing Orientation and Self-Confidence

By the end of the new hire nursing orientation week, students should be able to gather information about their unit, train with the hospital equipment, allow for peer interactions, perform realistic assessments of their patient population, and find relevance in the facility's policies and procedures. However, common challenges in trainee education include the wide range in level of training and the experience of learners, often from a variety of specialty backgrounds (Tainter et al., 2017). Nursing professionals in today's healthcare world are expected to take care of complex patients while delivering precise assessments and providing quality interventions into the plan of care, making orientation extensive and overwhelming.

With the added responsibilities of the nursing job, professional nurses, despite their level of experience, struggle with maintaining a level of competence and confidence with non-routine events in a new setting such as medical emergencies. Registered nurses working in surgery inpatient units at Memorial University of Newfoundland requested training for a Code Blue scenario to practice skills, improve knowledge, and build self-confidence in a safe and controlled environment (Williams et al., 2016). The educators planning the training felt "practicing a code in a safe, simulated environment would be a

means to improve confidence and ultimately improve patient safety” (Williams et al., 2016, p. 2). By providing a simulation-based learning experience, the researchers found that participants were able to put learned actions into practice on their unit. Nurse educators have an obligation to ensure that nursing staff are competent in the skills required to respond appropriately to patient emergency situations. Students at the United Kingdom School of Nursing, Midwifery, and Social Work felt that clinical simulation for practicing an emergency situation scenario increased their confidence, which in turn increased their competency in responding appropriately as opposed to the traditional approach of teaching (Dickinson, Hopton, & Pilling, 2016).

Active learning activities such as simulation implemented into the orientation setting gives nursing staff the chance to improve confidence, competency, and communication. Crocetti (2014) developed a program for maternity nurse faculty to explore if the use of simulation in their new hire orientation would result in greater self-efficacy. The evaluation tool used for the pilot study was composed of three sections, and results for all three demonstrated that clinical faculty felt confident and better prepared with the use of the active learning activity of simulation in their orientation (Crocetti, 2014). At the University of California San Diego Women and Infants Services, the nurse educator and the Director of OB residency created a training class to improve nursing and healthcare providers’ competence and confidence in responding to emergency events using simulation. Before the training, 70% of staff reported confidence and 62% demonstrated poor communication and slow response time; however, 96% of staff reported confidence after participation in the program training, and there was an annual 5% increase regarding improved communication (Sturgeon, 2015).

Influence of Benner's Theory

As patient acuity continues to increase, professional nurses require on-going development and guidance for education. Patricia's Benner's Novice to Expert model was developed with the practicing nurses in mind for growth (Candela, 2016). Benner calls nurse educators to deliver active learning experiences in their instructional programs to foster student learning. Benner and her colleagues found that when classroom and clinical instruction are not integrated, students receive a fragmented experience; therefore, learners need teaching methods, such as simulation or case studies, that keep students focused on the patient's experience, so nurses acquire multiple ways of thinking including clinical reasoning (Benner, Sutphen, Leonard, & Day, 2010).

For new hire orientation, nurse educators can use Benner's Novice to Expert theory to build an impactful transition experience for nurses on a continuum from no self-confidence at all to extremely confident in their professional responsibilities. Benner's model allows nurses to feel confident in their role which gives them an increased ability to convey confidence to others, including patients, families, and other staff (Andersson & Edberg, 2010). Educators can prepare learners to confidently succeed by establishing patient safety practices through education and providing realistic expectation of competence and skill acquisition in the healthcare setting (Murray, Sundin, & Cope, 2019).

C-Scale Evaluation Tool

The Confidence Scale (C-Scale) created by Susan Grundy, Ed.D., RN serves as a quality evaluation tool to measure nurses' perception of their self-confidence. Dr. Grundy recognized the significance of rendering confidence in nursing students and practicing

nurses but determined nurse educators did not have a valid or reliable instrument to measure confidence. The C-Scale survey was originally examined for performing physical head-to-toe assessments in order to test the tool for reliability and validity because physical assessments support “an important aspect of the assessment phase of the nursing process and represented part of a monitoring function of the nurse” (Grundy, 1993, p. 7).

The C-Scale is one page in length and poses five statements in a Likert-type scale format. Each statement gives the participant a number range to select from, varying from one (no confidence) to five (extremely confident). When the participant completes the entire evaluation tool, the numbers circled are added for each of the five statements; an individual's score can range from 5 indicating low confidence to 25 demonstrating high confidence (S. Grundy, personal communication, February 3, 2019).

The methodology used to originally test the C-Scale included 39 first-semester baccalaureate students enrolled in a nursing program in California, where data was collected four times over the semester; 22 staff nurses with at least one year of experience working in medical-surgical nursing at a local hospital were studied in order to establish the construct validity (Grundy, 1993). The scores on the C-Scale were correlated by instruments that were also constructed by the creator. These components included a 100-mm confidence visual analogue scale (C-VAS) and a confidence verbal descriptor scale (C-VDS) (Grundy, 1993).

When comparing mean scores of the C-Scale, the experienced staff nurses were significantly higher compared to the nursing students. Evaluation of internal consistency revealed high levels of reliability with Cronbach’s alpha ranging from .84 to .93 for the

nursing students and .85 for the staff nurses (Grundy, 1993). The test-retest correlation coefficient (n=31) using Spearman's rank order was .89 for the one-hour retest and .84 for the second re-test nine days later (Grundy, 1993). Construct validity of the C-Scale was supported by the results from the students first learning physical assessments as well as the experienced nurses; furthermore, concurrent validity was supported by the additional instruments: C-VAS and the C-VDS (Grundy, 1993). Overall, the data analysis suggests that the C-Scale measures confidence among the nursing profession.

Summary

While new hire orientation is known to be a challenging time for learning hospital policies, procedures, and equipment, it is essential to evaluate the use of an active learning environment among professional nurses in a new facility. It is imperative for nurse educators to adequately prepare nurses for realistic scenarios in the hospital setting such as responding to a medical emergency. The flipped classroom method has been deemed successful in many other healthcare disciplines. There is a need for nurse educators to implement this inverted learning model in the nursing profession such as orientation in order to enhance competency and improve self-confidence of the nursing staff.

CHAPTER III

Methodology

There has been insufficient research evaluating the use of the flipped classroom with practicing nurses in the hospital setting. The flipped classroom is an innovative approach that builds on traditional educational strategies to improve knowledge and perception of confidence (Tainter et al., 2017). The purpose of this study was to explore if the use of the flipped classroom versus traditional lecture in new hire nursing orientation improved nurses' self-confidence when implementing the hospital's policies, procedures, and equipment of responding to a medical emergency in the facility.

Study Design

This pilot study consisted of a quasi-experimental design to compare teaching methods, traditional lecture, and flipped classroom, in new hire orientation to determine if there was a correlation in the practicing nurses' self-confidence levels. The content that was used to evaluate this correlation was related to responding to a medical emergency in the hospital. This specific topic was chosen because it was already a part of the orientation agenda, it is a needed skill to perform competently in a new environment, and the impact of the outcomes is great. The teaching activities were taught by the primary researcher or another hospital clinical nurse educator with the understanding that content and format were equivalent.

The newly employed nurses at the facility who received the traditional lecture method in new hire nursing orientation served as the control group, and the newly employed nurses at the facility who received the flipped classroom teaching method served as the experimental group. The C-Scale tool developed by Susan Grundy, Ed.D.,

RN was used to evaluate the nurses' self-confidence levels after the content was delivered in the classroom. Data analysis was then assessed using IBM SPSS software version 24, where descriptive statistics and a t-test for independent samples were performed.

Setting and Sample

This pilot study was conducted using a convenience sample at a community hospital during new hire orientation, after obtaining institutional review board (IRB) approval from the hospital and the University. New hire orientation consistently occurred twice per month on every first and third week. All medical, surgical, and emergency department nurses participated in this orientation. A typical orientation week ran from Monday morning to Thursday afternoon. The research study occurred over a total of six orientation weeks. Each teaching method was used three times throughout the pilot study.

On Thursday mornings, registered nurses (RNs) and licensed practicing nurses (LPNs) received content on responding to a medical emergency in the hospital, such as a Rapid Response or a Code Blue. These nurses listened to a 20 to 30-minute lecture from a clinical nurse educator who used a PowerPoint presentation as a visual aide to learn about the policies, procedures, and equipment for responding to a medical emergency. At the end of the presentation, the nurses had the opportunity to ask questions. This current way of teaching served as the traditional lecture method for the study. The control group was the nurses who attended new hire orientation on the third week of the month when traditional lecture was applied.

For the experimental part of the study, new hire nurses in orientation on the first week of each month were assigned a brief 15-minute lecture in the form of a video

regarding content about responding to a medical emergency in the hospital. Nurses were assigned this video on Tuesday afternoon through their online learning account where they could view at any time of convenience for them until Thursday morning. The video gave similar information as the traditional lecture group with the same PowerPoint presentation to aid. On Thursday's orientation day, the nurses were asked if they had any questions from the video before participating in a mock code simulation activity during the classroom time. Nurses were able to implement the hospital's policies and procedures and use hospital equipment in the simulated room when participating in the case scenario. The simulation lasted approximately 15 minutes with a five to six minute debriefing session at the end of the classroom time.

Design for Data Collection

Collecting a consent document prior to the start of the orientation day would have impeded the benefits of gathering data anonymously. The content for the pilot study was already taught in new hire orientation every other week; the teaching method of the content was the only experimental variable. Basic information regarding the content and the associated activities were provided to the participating nurses in each group on their daily orientation agenda. The research involved no risk to the subjects, did not adversely affect their rights as subjects, and could not be practicably carried out with the waiver. The participants were provided with additional pertinent information after participation when appropriate.

The control group that received the traditional lecture method was taught the basics of the policies, procedures, and equipment used for responding to a medical emergency. There was a PowerPoint that complemented the lecture with writing and

visuals to address certain aspects such as: roles and responsibilities of the Rapid Response Team and Code Team, activation of the medical emergency response, guidelines for acute changes to call a Rapid Response or a Code Blue, features of the code cart and defibrillator, documentation, and post-code activities. At the end of the presentation, nurses were given the opportunity to ask questions. After the clinical nurse educator answered questions, the C-Scale evaluation tool was given to the nurses to assess their self-confidence if they had to respond to a similar situation at the patient's bedside.

The experimental group that received the flipped classroom method was first assigned a video toward the beginning of the orientation week that addressed all components similar to the traditional lecture presentation. Nurses had two days to watch this video at any point and as many times as they wished. At the end of the orientation week, nurses came to the classroom to participate in a mock medical emergency in the form of a simulation. After the case scenario, nurses ended with a debriefing session with the purpose to reflect on actions and thought-processes, communicate with team members, and identify successes and areas for future improvement in performance. According to the American Heart Association (2015), debriefing sessions should last no longer than six minutes, encourage learners to self-reflect, and engage open-ended questions for discussion (see Appendix C for Debriefing Tool). After the debriefing session, the C-Scale evaluation tool was handed out to the nurses to calculate their self-confidence in responding to a similar situation after being taught the content using the flipped classroom method.

The objectives for the “Responding to a Medical Emergency” simulation included: recognition of a deteriorating patient, timely and accurately initiation of the emergency response system using hospital policy, implementing hospital procedure, executing interdisciplinary teamwork and clear communication, and operating hospital equipment correctly such as using the code cart and defibrillator. The scenario for the simulation activity consisted of a patient who was admitted to the hospital with chest pain and found to be unresponsive in her room (American Heart Association, 2015). The nurses role-played the scenario by working together to deliver patient care in this medical emergency situation (see Appendix D for Simulation Case Scenario). After 15 minutes of simulation, the scenario ended, and the nurses transitioned into the debriefing session with the clinical educator.

Measurement Method

The C-Scale evaluation tool developed by Susan Grundy, Ed.D., RN was used as the measurement method of this research study. Written permission was obtained to use the C-Scale tool for this study by the creator (S. Grundy, personal communication, February 3, 2019) (see Appendix E for Permission to Use C-Scale). The only component of the tool that was altered was the directions statement, but permission was granted to do so. At the end of the classroom time for the responding to a medical emergency content in new hire orientation on Thursday mornings for both the control and experimental groups, the nurses were asked to complete the five-questions of the printed copy of the C-Scale evaluation.

The components that were evaluated within the C-Scale included performance certainty, hesitation, competence, sureness, and satisfaction. The participants placed a

circle around the appropriate number that corresponded with their confidence level for each of the five statements. Subjects were required to participate in new hire nursing orientation; however, the completion of the C-Scale evaluation tool was voluntary and not a requirement of employment. Failing to complete the C-Scale did not affect employment or result in any penalties. The C-Scale tool was chosen to assess the confidence of the practicing nurse due to its marginal time requirement, directness for the learner, and the simple approach to find a numerical value for the participants' confidence level.

Data Collection Procedure

The primary researcher collected the data throughout the study. The only information that was gathered was the participants' written C-Scale evaluation responses to the five statements. The data was collected at the end of each Thursday orientation day after the responding to a medical emergency content had been provided. Completed surveys were placed anonymously in such a way that prevented the researcher or anyone else from identifying the participants' evaluation responses. A comparison of the five self-confidence statements was evaluated between participants who received the traditional lecture and participants who received the flipped classroom experience.

Protection of Human Subjects

The protection of human subjects was considered throughout the study design. Appropriate measures were taken to ensure that each participant of the study remained anonymous during data collection and the data analysis process. After the nurses completed the C-Scale evaluation tool, they were able to anonymously place their paper in a designated folder in the orientation classroom. The C-Scale evaluation did not

include any personal identifiers such as name, employee ID, or unit/floor. The clinical nurse educator facilitating orientation collected the folder with the completed responses after the nurses had finished orientation that day. The primary researcher stored the data collected during the study in a private electronic folder that requires two levels of password protection. The hard copies of the C-Scale evaluation were kept in a locked file in the primary researcher's office, who was the only one with access to the key. The data was submitted to a representative at the School of Nursing Research and EBP Council at the University and will be kept for three years, then destroyed.

Data Analysis

IBM SPSS software version 24 was used to complete analysis of the survey data. Descriptive statistics was utilized to determine mean scores. A t-test for independent samples was applied to determine whether newly employed hospital nurses participating in the flipped classroom were significantly more confident to respond to a medical emergency at the bedside than those participating in the traditional lecture.

Summary

This study was designed to determine if the flipped classroom teaching method in new hire orientation correlated with higher self-confidence levels in practicing nurses compared to traditional lecture. By using the content of responding to a medical emergency, the nurses were able to examine the facility's policies, procedures, and equipment. The use of the C-Scale evaluation tool revealed the perceived self-confidence levels of the subjects in this research study.

CHAPTER IV

Results

Once data was collected, the information was entered into the IBM SPSS Statistics software Version 24 for data analysis. The data was recorded and analyzed by the primary researcher for the study. The purpose of the data analysis was to evaluate if the flipped classroom teaching method in new hire nursing orientation increased nurses' self-confidence to competently respond to a medical emergency compared to a traditional lecture method. The data collected from this research study was intended to improve the hospital orientation process for new hire nurses, so they feel more confident in their practice at the bedside.

Sample Characteristics

There were 24 newly-hired practicing nurses at the hospital facility eligible to participate in this research study over a three-month period. During six orientation weeks, there were a total of 15 flipped classroom participants and nine traditional lecture contributors. The new hospital Registered Nurses and Licensed Practicing Nurses were employed on medical, surgical, and emergency departments. As part of the orientation process, students were required to participate for the content portion; however, completion of the survey following the teaching method was voluntary. All of the eligible nurses in orientation during the months of April to June returned C-Scale evaluations at the conclusion of their orientation week.

Major Findings

Each newly-employed hospital nurse was asked to complete the C-Scale evaluation tool in new hire orientation after the content for responding to a medical

emergency had concluded for both traditional lecture as well as the flipped classroom method. Participants completed all five questions on the Likert-type scale of the evaluation tool. The total responses from each study participant were recorded. The mean and standard deviation values of each teaching method were calculated using descriptive statistics in SPSS (see Table 1). The overall mean and standard deviations (SD) of the participants' combined average scores were calculated as well. The flipped classroom method scored higher cumulatively in self-confidence levels with a mean of 3.8 (SD .85), whereas the traditional lecture had a mean of 3.62 (SD .72).

Table 1

Descriptive Statistics of C-Scale Evaluation Responses

Question	Mean		Standard Deviation	
	Traditional Lecture	Flipped Classroom	Traditional Lecture	Flipped Classroom
1. I am certain that my performance is correct	3.56	3.80	.882	.862
2. I feel that I perform the task without hesitation	3.56	3.67	.882	.976
3. My performance would convince an observer that I'm competent at this task	3.67	3.80	.866	.862
4. I feel sure of myself as I perform the task	3.56	3.87	.726	.834
5. I feel satisfied with my performance	3.78	3.87	.833	.834

For the flipped classroom method, the mean and the median values of self-confidence in responding to a medical emergency were both 3.8 which indicated a normal distribution of the data. For the traditional lecture method, the mean was 3.62 whereas the median was 3.8. Because the median was greater than the mean, it was determined that the traditional classroom was negatively skewed. The histograms (see Figure 1) display these values as well.

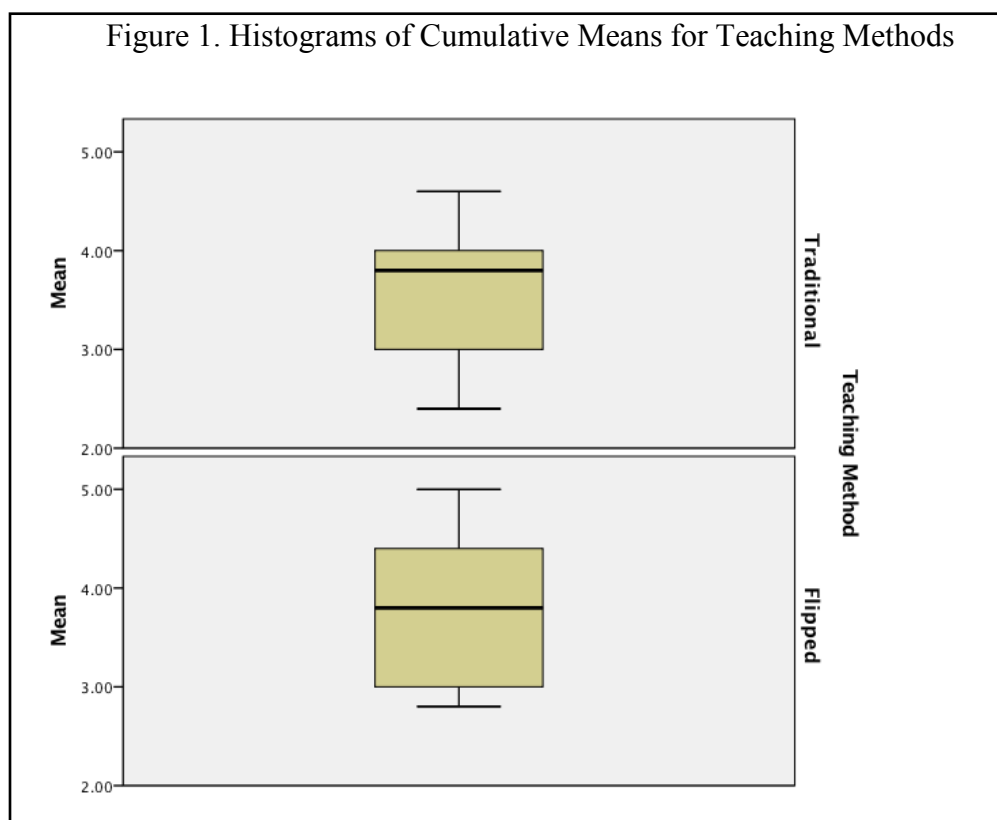


Figure 1. Histograms of Cumulative Means for Teaching Methods

Data was further analyzed using a t-test to determine if there was a statistically significant difference between the traditional and flipped classroom teaching methods for content on responding to a medical emergency in the hospital. The p-values for each of the five individual questions were all greater than .05, which was the level of significance; therefore, there was not a statistically significant difference seen in the

teaching method for this research study. Table 2 displays the data analysis from the paired t-test of all individual questions. A t-test for the learners' average scores of the five questions was also performed. The p-value (.591) for this data was also greater than the level of significance of 0.05. With the statistical data presented, it can be concluded that participation in a flipped classroom learning environment for responding to a medical emergency did not lead to significantly higher levels of confidence in newly hired nurses compared to the traditional lecture method.

Table 2

T-test for Equality of Means

Question	Significance (p value)
1. I am certain that my performance is correct	.516
2. I feel that I perform the task without hesitation	.777
3. My performance would convince an observer that I'm competent at this task	.719
4. I feel sure of myself as I perform the task	.349
5. I feel satisfied with my performance	.803

Summary

The mean, standard deviation, total scores, and t-tests were utilized to analyze the hypothesis of this research study. The data collected throughout the research study suggested that the flipped classroom teaching method does not significantly increase the self-confidence of the newly hired nurse when implemented into new hire orientation content. By applying hospital policy, procedure, and equipment into the responding to a medical emergency learning activity, nurses did not identify considerably more confidence in themselves to practice competently at the bedside.

CHAPTER V

Discussion

Even though the flipped classroom teaching method has been studied in multiple fields pertaining to healthcare, there is little data on its impact on practicing nurses in the hospital setting. The flipped classroom has been proven to be effective in improving outcomes for students; however, further research is needed with new hire nurses in orientation and the relationship with self-confidence levels. The purpose of this research study was to explore if the flipped classroom method significantly impacted self-confidence levels of new hire nurses during the orientation content on how to competently respond to a medical emergency at a patient's bedside.

Implications of Findings

The C-Scale evaluation tool used for this research study incorporated various elements of measuring self-confidence levels including certainty, hesitation, competency, feeling sure, and satisfaction with performance. These five categories are pertinent at the bedside for the nurse to be able to competently care for a patient, especially when responding to a medical emergency. By assessing nurses' satisfaction with their learning and self-confidence, nurse educators can execute educational programs that improve knowledge acquisition and clinical practice (Omer, 2016). The results of this research study indicated that learners in the flipped classroom method scored higher in all five categories regarding self-confidence levels compared to traditional lecture based on individual evaluation data. Learners in the flipped classroom method scored highest cumulatively on "I feel sure of myself as I perform the task," as well as "I feel satisfied with my performance."

According to Tan et al. (2017), many research studies have reported that the flipped classroom has many positive educational outcomes such as developing critical thinking skills, but there is no method to verify if these outcomes relate to improved student learning and attitude. This research study found no statistically significant difference between the flipped classroom and traditional lecture regarding the content about responding to a medical emergency. There is still an insufficient amount of data collection to confirm the effectiveness of the flipped classroom approach for new hire nursing orientation with practicing nurses.

Application to Theoretical Framework

Benner's Novice to Expert theory guided the research study. It examined the perceptions of self-confidence of new hire nurses at a hospital facility; these nurses had never been employed at the organization or had not worked there for over a year. The sampled nurses were unfamiliar with the hospital's most updated policies, procedures, and equipment for responding to a medical emergency in the facility. These factors would categorize the sampled nurses as novices in Benner's Novice to Expert theory. Benner's premise behind the model is that the experience of real-world nursing practice provides opportunities for progressive development of expertise (Candela, 2016). The flipped classroom teaching method such as a simulation for responding to a medical emergency stands on this principle through active learning strategies in the classroom. The findings of the study were congruent with the theoretical framework through cumulative higher self-confidence levels of learners in the flipped classroom setting.

Limitations

This research study was limited to only three months of data collection totaling six weeks of new hire orientation. The data collected only took place at one community hospital facility. The sample size of nurses to complete the study during the collection time was limited as well. There was only a total of nine new hire nurses for the traditional classroom teaching method and 15 for the flipped classroom method during the months of March to May.

The scenario that was integrated into the flipped classroom teaching method was the first simulation experience that the clinical nurse educators implemented in the new hire orientation setting. The nurses' assigned unit and experience levels were not included in the evaluation form, so it could not be assessed if those factors played a role in the nurses' confidence levels. Furthermore, the unfamiliarity of the simulation scenario and the unknown role of the learner in the simulation may have affected the perception of self-confidence.

Implications for Nursing

With the current, demanding state of the healthcare world, registered nurses and licensed practicing nurses are held to a higher standard to provide quality, safe, competent care at the patient's bedside even in emergent situations. Nurse educators in the hospital setting have a responsibility to provide new nurses with an orientation experience that ensures confidence in self, competent care, and good communication. Individual evaluations completed by the nurses in this study indicated that learners felt more confident in their abilities with the flipped classroom teaching method which

provided nurses with an opportunity to practice those desired qualities in a safe environment.

However, study findings concluded that new hire nurses' perception of self-confidence following a flipped classroom experience in orientation is not statistically high enough to be classified as a more effective method of teaching. Orientation is one of the first experiences that nurses encounter at a new facility after being hired. As nurse educators continue to design orientation that meets the needs of the nurses at the facility, it may be important to consider the teaching method and content presentation with associated activities. This research study has exhibited that the teaching method used in orientation could affect the self-confidence of new hire nurses to competently practice at the patient's bedside. Nursing educators in the hospital setting should be able to use this data presented to guide their orientation processes.

Recommendations for Future

This research study could be further explored by collecting data over a longer period of time or implementing the two different teaching methods at various hospital facilities in new hire nurse orientations. These factors would increase sample size of practicing nurses in order to gain a broader insight into learner perceptions of their self-confidence. As hospital organizations continue to accept diverse nursing professionals into their facility, it may be more beneficial for the study to include in the evaluation form the unit/floor the nurse will be working on, how many years they have been a nurse, and their background during their nursing career. Also, it could be valuable to provide an additional space at the bottom of the evaluation for learners to give further qualitative comments on the teaching presentation so clinical nurse educators can examine these

learners' various learning preferences when designing content and activities for new hire nursing orientation. This study could also compare the self-confidence levels of new hire experienced nurses versus new graduate nurses in their orientation process.

Conclusion

The flipped classroom instructional method provides a new modality for nurse educators to implement into their teaching, including new hire orientation. Nurses need to know hospital policies, procedures, and equipment in order to be competent at the bedside, especially when responding to a medical emergency. Through active learning strategies in the classroom, the self-confidence of the nurse could be improved. This research study suggests that more in-depth analysis should be performed in the future to confirm the effectiveness of the flipped classroom teaching method over traditional lecture in new hire orientation.

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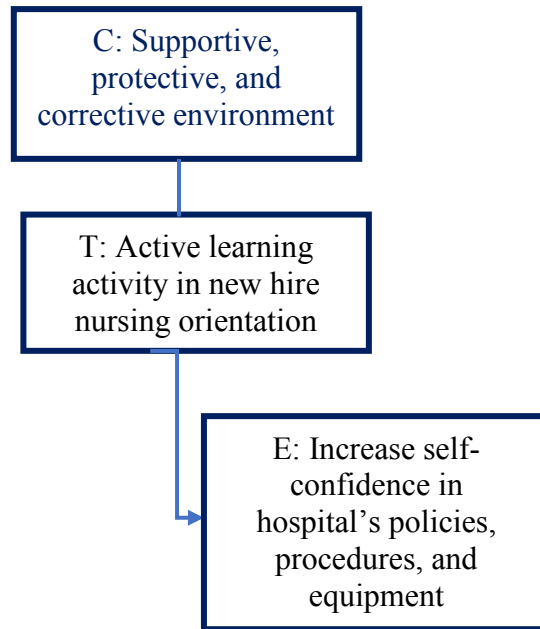
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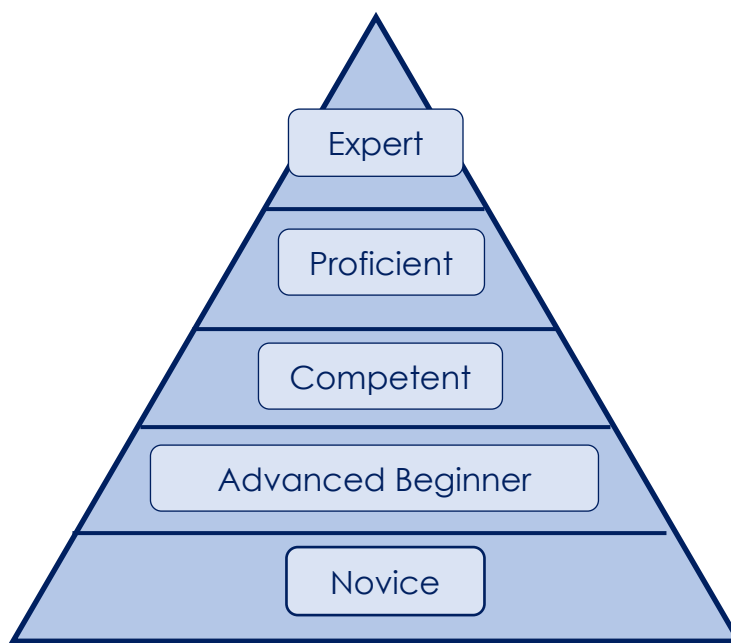
Appendix A

CTE Diagram



Appendix B

Benner's 5 Stages of Skill Aptitude (Benner, 1984)



Appendix C

Debriefing Tool (American Heart Association, 2015)

Action	Gather	Analyze	Summarize
<ul style="list-style-type: none"> • Assigns team roles and directs the team (effective team dynamics) • Directs the systematic approach • Directs team to administer 100% oxygen • Directs team to apply monitor leads • Directs IV or IO access • Directs appropriate defibrillation and drug treatment • Directs reassessment of patient in response to treatments • Summarizes specific treatments • Verbalizes indications for advanced airway if needed • Considers reversible causes • Directs post-cardiac arrest care 	<p>Student Observations (primary is Team Leader and Timer/Recorder)</p> <ul style="list-style-type: none"> • Can you describe the events from your perspective? • How did you think your treatments went? • Can you review the events of the scenario? <i>(directed to the Timer/Recorder)</i> • What could you have improved? • What did the team do well? 	<p>Done Well</p> <ul style="list-style-type: none"> • How were you able to <i>[insert action here]</i>? • Why do you think you were able to <i>[insert action here]</i>? • Tell me a little more about how you <i>[insert action here]</i>. 	<p>Student-Led Summary</p> <ul style="list-style-type: none"> • What are the main things you learned? • Can someone summarize the key points made? • What are the main take-home messages?
	<p>Instructor Observations</p> <ul style="list-style-type: none"> • I noticed that <i>[insert action here]</i>. • I observed that <i>[insert action here]</i>. • I saw that <i>[insert action here]</i>. 	<p>Needs Improvement</p> <ul style="list-style-type: none"> • Why do you think <i>[insert action here]</i> occurred? • How do you think <i>[insert action here]</i> could have been improved? • What was your thinking while <i>[insert action here]</i>? • What prevented you from <i>[insert action here]</i>? 	<p>Instructor-Led Summary</p> <ul style="list-style-type: none"> • Let's summarize what we learned... • Here is what I think we learned... • The main take-home messages are...

Appendix D

Simulation Case Scenario (American Heart Association, 2015)

Case 36**Scenario Location: In-Hospital****Scenario Topic: Cardiac Arrest (VF/pVT)****Scenario Rating: 2**

Lead-in: A 65-year-old woman who was admitted with chest pain is now found to be unresponsive and with agonal respirations.

Case Development

Initial Information	A 65-year-old woman who has a history of hypercholesterolemia and hypertension presented with shortness of breath and chest discomfort. About 6 hours after admission, she is found to be unresponsive with agonal respirations by a nurse, who calls you to the bedside. What are your actions?
Additional Information	<p>Initial actions including calling for help (call a "code"), starting CPR, and attaching the defibrillator.</p> <p>Additional responders will be present after calling for help and can delegate tasks.</p> <p>You call a code while asking the nurse for the defibrillator to be attached and simultaneously having other responders begin chest compressions and ventilation with a bag-mask device. What are the next actions?</p> <p>An ECG reveals VF.</p> <p>A shock should be given immediately after charging. Compressions should be resumed while charging.</p> <p>What are your next actions?</p>
Additional Information (if needed)	The patient is defibrillated a second time for VF, and chest compressions are resumed. What are your next actions?

Appendix E

Permission to Use C-Scale

From: Grundy, Susan <grundys@csus.edu>
Sent: Sunday, February 3, 2019 6:15:06 PM
To: Hallie Barnett
Subject: Permission to use C-Scale - Hallie Barnett (Gardner-Webb University)

Dear Hallie:

You have my permission to use the C-Scale I developed in your thesis project at Gardner-Webb University. The copy I am sending to you has "head-to-toe assessment" listed as the skill. It is very easy to change the skill, the type of patient (pediatric versus adult), or the setting. Please feel free to modify the C-Scale as you wish for your research activity that will focus on newly hired nurses.

The C-Scale is under copyright protection but there is no fee attached to using the instrument. I do ask that you credit me as the developer of the original instrument.

When the subject completes the scale - just add the numbers circled on each of the 5 statements. An individual's score can range from 5 (low confidence) to 25 (high confidence). Do not add the 5 numbers and then divide by 5.

The correct citation of the publication discussing the C-Scale is Nurse Educator (1993), Vol. 18, No. 1, pp 6-9. (The 1992 issue of the article lacked all of the information that I had edited.) The 1993 article contains the information you need on validity etc.

If you have any questions, feel free to email me. If you need a formal letter granting permission to use the C-Scale, let me know.

If not inconvenient, I would love to have an abstract of your findings when you are done. I wish you the best of luck with your research. Thank you for adding to the body of nursing science. And thank you for such a well-thought-out request to use the C-Scale. Your modification fits well with how the C-Scale can be adapted to different situations.

Sincerely,

Susan Grundy, Ed.D., RN

Professor Emeritus

California State University, Sacramento

Also, please let me know if you get this email and that you are able to open the attached copy of the C-Scale.