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Relationship Between Student-Centered, Active Learning Strategies and Student Success in an Undergraduate Nursing Course

Camden Seal
Walden University

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Camden Seal

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Walden University
2022

Abstract

Relationship Between Student-Centered, Active Learning Strategies and Student Success
in an Undergraduate Nursing Course

by

Camden Seal

MSN, Walden University, 2012

BSN, University of Akron, 1996

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Nursing

Walden University

November 2022

Abstract

In 2010, the Institute of Medicine issued a report calling for the transformation of undergraduate nursing education to prepare new graduates for the complexities of practice. To improve preparation for practice, faculty responded by incorporating student-centered, active learning strategies (SCALS); however, the effectiveness of SCALS has not been examined. The purposes of this descriptive correlational study, guided by Brunner's constructivist theory, were to determine the relationship between (a) a nurse educator's use of SCALS and the percent of students that successfully completed the course, (b) an educator's self-perception of their learner-centeredness and the use of SCALS, and (c) an educator's beliefs about learner-centeredness and the use of SCALS. Participants included 180 undergraduate nursing faculty with active, unencumbered registered nursing licenses, responsible for designing and planning teaching strategies, who had taught a face-to-face course within the last 2 years. Data were collected using the Ellis Learner-Centered Teaching in Nursing Education Questionnaire. Simple linear regression was conducted to identify relationships between variables. Results indicated that self-perceptions of learner-centeredness had less of an effect than beliefs about the effectiveness of the strategies on the use of SCALS in the classroom. The use of SCALS was shown to have a positive relationship with student success in the course. Further research into the use and effectiveness of strategies that improve learning outcomes is warranted. Effective use of SCALS in the undergraduate nursing classroom will contribute to positive social change by improving critical thinking skills of new graduates and facilitate successful transition to nursing practice.

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Dedication

I dedicate my dissertation to the students who have energized me, the colleagues who have encouraged me, and to my loved ones who have supported me. Each of you have touched my heart and inspired me to pursue my dreams.

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Chapter 1: Introduction to the Study

Student-centered, active learning (SCAL) strategies are defined in various ways throughout the literature as those that shift the responsibility for learning from the teacher to the learner who takes initiative and responsibility for their learning process (Blumberg, 2009; Bristol et al., 2019; McDonough, 2014). These strategies provide opportunities for active engagement with the material and include, but are not limited to, flipped classrooms, case studies, group activities, and simulated clinical experiences (Bristol et al., 2019; Chan et al., 2016; Docherty et al., 2018; Duane & Satre, 2014; Shah et al., 2014; Van Horne & Murniati, 2016). In conducting this study, I sought to identify the relationship between the use of active learning strategies and student success in an undergraduate nursing course.

This study contributes to the overall body of knowledge supporting effective strategies and best teaching practices in undergraduate registered nursing education. Improving the quality of education will facilitate the development of highly skilled nurses ultimately contributing to higher quality and safety of patient care. The results may serve to guide educators in the use of strategies that will improve student learning outcomes. They will also promote positive social change by contributing to the identification of effective educational practices ensuring future generations of nurses are better prepared to provide safe, efficient, and competent patient care.

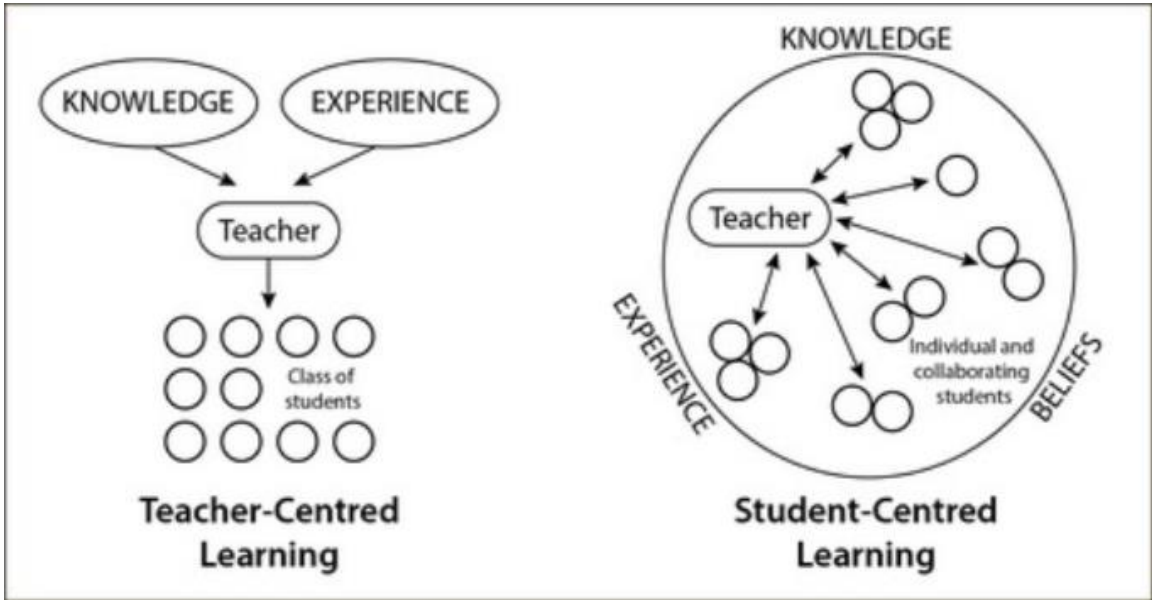
Chapter 1 includes the background of the study, problem statement, purpose, research question and hypotheses, theoretical framework, nature of the study, definitions, assumptions, scope and delimitations, limitations, and the significance of the study.

Background

Traditional teaching methods generally consist of an instructor at the front of the class providing information, often in the form of a lecture, to students who passively receive the information presented to them (Figure 1). In contrast, student-centered pedagogies focus on the learner, rather than the teacher, as the central figure in the retention of knowledge (Blumberg, 2019; Faulcon, 2015; Wright, 2011). Student-centered activities encourage real-time, active collaboration with classmates to formulate and answer questions through discussion and active research into the topic of interest.

Figure 1

Teacher-Centered and Student-Centered Classrooms



Note. Diagram of teacher-centred and student-centred classrooms, by J. Cornwall, 2021, *Teaching practical skills* [Infographic]. (<https://www.otago.ac.nz/oms/otago831825.pdf>). Reprinted with permission.

Throughout the literature, the term *student-centered* most commonly describes a variety of classroom activities that shift the responsibility for learning from the teacher to the student (Blumberg, 2019; Bristol et al., 2019; Froyd & Simpson, 2010; Stanley & Dougherty, 2010; Young & Patterson, 2007). Young and Patterson (2007) defined the term as “a teaching/learning process that actively engages students in the development of knowledge rather than passive recipients of information transmitted by teachers” (p. 578). Student-centered learning is also a combination of the words *student*, *centered*, and *learning*. Synonyms include student-centred (alternate spelling) learning, learner-centered education, and learner-centered teaching.

Adults, as self-directed learners, take initiative for seeking knowledge. Knowles et al. (2015) purported self-directed learners are proactive and learn better than reactive learners who are passively engaged. Motivation and retention are key concepts in the adult learning process, and although adult learners may be motivated by both internal and external factors, retention is directly related to the amount of practice and use during the learning process (Dewi et al., 2019; Jensen et al., 2017; Knowles et al., 2015).

Adult educators need to facilitate a learning environment that supports various motivating factors and provides opportunities for active engagement with the material. The term *active learning* refers to a process of knowledge development involving a variety of instructional strategies designed to foster engagement with new information and promote new ways of thinking and responding (Dong et al., 2019; Fero et al., 2009; Forneris & Fey, 2018; Knowles et al., 2015; McDonough, 2014; Van Horne & Murniati, 2016). Active engagement with material fosters deeper levels of learning, ability to apply

the new information, and retention of new knowledge. The term “student-centered learning” is also used interchangeably with terms such as collaborative learning, experiential education, and active learning, which may refer to a wide variety of strategies including flipping the classroom, cooperative learning activities, speaking activities, class discussion, simulations, peer teaching, library assignments, computer-aided instruction, and independent homework assignments (Mangram et al., 2015).

Bristol et al., (2019) defined active learning as strategies that engage students and encourage reflection about the activity. The term “student-centered” is found throughout the literature in discussions of various concepts, but its association with active learning serves as the focus of this study. Complexity of the concept and the variations in definition notwithstanding, research supporting the benefits of active learning as applied across different age groups and disciplines is well documented. However, a lack of evidence regarding the relationship between SCALS and academic success creates a gap in the literature that this study seeks to address.

Problem Statement

Until recently, nursing curricula has been developed and implemented using traditional, instructor-led teaching strategies. This model has effectively educated generations of nurses, but advances in educational pedagogies, new technology, and the increasing complexity of healthcare has led national organizations such as the Institute of Medicine (IOM), the National League for Nursing (NLN), the American Nurses Association (ANA), and Quality and Safety Education for Nurses (QSEN) to recommend a change in the way nurses are educated (Bryer & Peterson-Graziose, 2014; Docherty et

al., 2018; Donohue-Porter et al., 2017; Ellis, 2016; Kavanagh & Sharpnack, 2021; Stanley & Dougherty, 2010; Waltz et al., 2014). Issued in 2010, *The Future of Nursing: Leading Change, Advancing Health* report states:

Major changes in the U.S. health care system and practice environment will require equally profound changes in the education of nurses. An improved education system is necessary to ensure that the current and future generations of nurses can deliver safe, quality, patient-centered care across all settings, especially in such areas as primary care and community and public health.

(Gorski et al., 2015, p. 53)

The *Future of Nursing* report also cited evidence supporting a need for:

- more highly educated nurses;
- institution of preceptorship and internship programs in acute care settings;
- improved access to seamless academic progression;
- increased diversity of nurses;
- advancement of the science of nursing education through research; and
- implementation of strategies to improve preparation and retention of newly graduated nurses (Bryer & Peterson-Graziose, 2014; Docherty et al., 2018; Ellis, 2016; Fiedler et al., 2014; Hurst, 1985; IOM, 2010; Ironside, 2004; Kantar, 2014; Kavanagh & Sharpnack, 2021; Romeo, 2010; Spector et al., 2015). It is important that implementation of educational strategies is based on sound evidence and that learning outcomes are evaluated to adequately advance the science of nursing education.

Nurse educators need to incorporate evidence-based practices to effectively prepare graduates for successful transition to practice (Bristol, et al., 2019; Custer, 2016; Giddens et al., 2020; IOM, 2010; Kavanagh & Sharpnack, 2021; Mangram et al., 2015; NCSBN, 2022; Van Horne & Murniati, 2016). In the complex and continuously evolving field of healthcare, regardless of the specialty or care environment, nurses are expected, and trusted, to provide safe, effective, and quality patient care. In response to reports that newly graduated nurses are inadequately prepared for transition to practice (IOM, 2010; NCSBN, 2022), many undergraduate registered nursing programs have made changes to their curricula and incorporated instructional methods with the goal of improving student outcomes (Kavanagh & Sharpnack, 2021; NCSBN, 2022; Schmidt, 2010). The need for additional research to identify and support best practices in the preparation of nursing students can be found throughout the literature (Blumberg, 2019; Bristol et al., 2019; Docherty et al., 2018; Fiedler et al., 2014; Goodman et al., 2018; Hessler & Henderson, 2013; Waltz et al., 2014). The NLN recommended incorporation of active teaching strategies to increase student's abilities to think critically and communicate effectively (Beckers et al., 2021; NLN, n.d.; Waltz et al., 2014). Kavanagh and Sharpnack (2021) emphasized the need for advances in nursing education that incorporate pedagogies relevant to a new generation of learners.

Extensive research into the use of SCALS has been conducted over the past several decades, but few studies have examined effectiveness of these methods in undergraduate registered nursing curricula. Current literature supports the use of student-centered learning in the form of various active learning strategies, but nursing faculty

often struggle with successfully incorporating these new methods into their daily lesson plans (Fiedler et al., 2014; Goodman et al., 2018; Waltz et al., 2014). Although studies into active learning strategies examining the efficacy of flipped classrooms, small group work, case studies, peer teaching and collaborative assignments demonstrated positive learning outcomes in areas of study such as mathematics, medicine, computer science, life sciences, other general education classes (Dear, 2017; Dong et al., 2019; Hannafin & Hannafin, 2010; Hwang, 2021; Jensen et al., 2017; Mangram et al., 2015; McDonough, 2014; Peneva et al, 2017; Rodrigues, 2012; Santoso, et al, 2018; Van Horne & Murniati, 2016; Wu et al., 2012), there is a lack of information on the effectiveness of SCALS on undergraduate nursing student success.

Purpose of the Study

The purposes of this quantitative study were to explore (a) the relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course, (b) the relationship between an educator's self-perception of their learner-centeredness and their use of SCALS, and (c) the relationship between an educator's beliefs about learner-centeredness and their use of SCALS.

Independent variables included the use of SCALS in an undergraduate, registered nursing classroom; faculty beliefs regarding the efficacy of these strategies; and faculty perceptions of their own learner-centeredness. Faculty were asked to answer questions pertaining to a face-to-face class that they recently taught. The dependent variable studied was the percent of students that earned a passing grade in the course. Additional variables of interest included the type of undergraduate nursing program (diploma, associate

degree, baccalaureate degree), location of the course in the nursing program (beginning, middle, or end), type of course/content taught, number of times the teacher has taught the course, and whether the course has an associated clinical component.

Research Question and Hypotheses

The research questions addressed by this study were:

RQ1: What is the relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course? The independent/predictor variable, ELCTNEQ, measured on an interval level, was the use of active learning strategies in an undergraduate registered nursing program as reported on the Ellis Learner-Centered Teaching in Nursing Education Questionnaire. The dependent/outcome variable, SUCCESS, also measured on an interval level, was the percent of students that successfully complete the course by earning a passing grade.

H_{01} : There is no relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course.

H_{11} : There is a relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course.

RQ2: What is the relationship between an educator's self-perception of their learner-centeredness and the use of SCALS? The independent/predictor variable, IDENTITY, measured on an ordinal scale, was the educator's self-perception of their learner-centeredness identified by participant selection on Survey Question 10. The dependent/outcome variable, ELCTNEQ, measured on an interval level, was the use of

SCALS in the course as reported on the Ellis Learner-Centered Teaching in Nursing Education Questionnaire.

H₀₂: There is no relationship between an educator's self-perception of their learner-centeredness and the use of SCALS.

H₁₂: There is a relationship between an educator's self-perception of their learner-centeredness and the use of SCALS.

RQ3: What is the relationship between an educator's beliefs about learner-centeredness and the use of SCALS? The independent/predictor variable, BELIEFS, measured on an ordinal scale, was the educator's self-perception of their learner-centeredness as measured by participant's combined score on Survey Questions 8 and 9. The dependent/outcome variable, ELCTNEQ, measured on an interval level, was the use of SCALS in the course as reported on the Ellis Learner-Centered Teaching in Nursing Education Questionnaire.

H₀₃: There is no relationship between an educator's beliefs about learner-centeredness and the use of SCALS.

H₁₃: There is a relationship between an educator's beliefs about learner-centeredness and the use of SCALS.

Theoretical Framework

The concept of active learning has origins in the field of psychology with foundations based on Jerome Bruner's (1977) theory of constructivism, which states, "significant learning is acquired through doing" (Blumberg, 2019; Xu & Shi, 2018). Constructivism states students learn more through their experiences and active

involvement than by passive participation associated with listening or observing.

Bruner's theory of constructivism, which states humans construct knowledge through experiences and by reflecting upon those experiences, provides a theoretical framework for exploring the use of SCALS in nursing education. Constructivism operates on four major assumptions:

- 1) new information is transformed and interpreted based on previous learning,
- 2) assimilation and accommodation of new information leads to new constructions,
- 3) the ability to hypothesize, predict, manipulate, and construct knowledge is more meaningful learning than memorization of facts,
- 4) meaningful learning occurs through reflection and linking new information to existing knowledge.

Consistent with the theory of constructivism, active learning strategies allow faculty members to guide and facilitate learning by providing students with opportunities to interact with material independently and then actively use or apply the information learned (Bruner, 1977; Henson, 2015). The theory suggests nursing students learn best through active participation, engagement with the material, and reflection on the process (Bristol, et al., 2019; Bruner, 1977; Chan, et al., 2016; Jensen et al., 2017; Kantar, 2014; Xu & Shi, 2018). As the framework provides insight into the roles of the teacher and student in the development of knowledge, the theory was an appropriate choice, and no modifications or adjustments were needed. Additional information on the theory of constructivism is provided in Chapter 2.

Nature of the Study

Student-centered teaching strategies implemented at the postsecondary level often include strategies that encourage active engagement with the material rather than teacher-centered strategies that focus primarily on passive presentation of material. Much of the research into SCALS has used a qualitative approach seeking to explore satisfaction with these strategies and gain understanding of the phenomenon. I used a quantitative, correlational, cross-sectional design to assess the statistical relationship between variables (Creswell, 2014; Grove et al., 2013).

Research studies on SCALS have used surveys to explore and examine the use of student-centered instruction (Bryer & Peterson-Graziose, 2014; Docherty et al., 2018; Ellis, 2016). I selected a quantitative, correlational, cross-sectional design because it was a flexible, cost-effective way to collect desired data related to the topic of interest from many participants.

The study population consisted of nurse educators from undergraduate registered nursing programs in the United States. Inclusion criteria for this study were (a) registered nurses with active, unencumbered licenses; (b) held a position such that they were responsible for designing, planning, and incorporating teaching strategies designed to assist a nursing student to meet the course objectives or outcomes (OBN, 2022); and (c) taught a face-to-face course in an approved undergraduate registered nursing program within the past two years.

Exclusion criteria for this study were (a) registered nurses with lapsed or restricted licenses; (b) teaching assistants or faculty members that do not design or plan

teaching strategies (c) faculty that solely teach in licensed practical or vocational nursing programs; and (d) educators that have not taught a face-to-face course in the past two years.

Study participants were provided an electronic link to a list of survey questions from the ELCTNEQ (Ellis, 2016). Questions from the ELCTNEQ were designed to measure the use of learner-centered, active learning methodologies in an undergraduate nursing course. Participants were also asked to report the percent of students that earned a passing grade in the course. Data were analyzed to identify the relationship between the variables.

Definitions

For the purposes of this study, the following definitions applied:

Active learning strategies: beliefs, actions, and methods that focus on engaging students with the material. Methodologies include collaborative activities, case studies, small-group discussions, flipped classrooms, peer presentations, simulation, gaming, class debates, think-pair-share activities, role playing, reflection journals, online discussion posts, clickers, and 1-minute papers (Bristol et al., 2019; Hwang, 2021; Van Horne & Murniati, 2016).

Learning outcomes: statements that specify the knowledge or skills students are expected to acquire upon completion of an assignment, course, or program (Weimer, 2015). Nursing faculty, responsible for planning and implementing teaching strategies, were asked to answer questions about a face-to-face undergraduate course that they had

taught within the past two years. The percent of students that successfully completed the course was used as the measure of learning outcome attainment for this study.

NCLEX-RN licensure exam: a test that serves as the standard measure of competence for the nurse graduate. Students are eligible to apply to take the exam upon completion of an accredited undergraduate registered nursing program (NCSBN, 2022).

Nurse educator: a nurse that teaches in an undergraduate registered nursing program and maintains responsibility for designing and planning teaching strategies implemented within the course. Synonymous with teacher, faculty, educator, or facilitator.

Student-centered learning: refers to beliefs, actions, and methods based on student accountability and responsibility for learning (Blumberg, 2019; Faulcon, 2015; Shah et al., 2014). Synonymous with *learner-centered* (Hodge, 2010).

Teacher-centered learning: refers to beliefs, actions, and methods that focus primarily on presentation of information rather than active engagement with the material.

Assumptions

An underlying assumption of this study was that the academic achievement is required for student nurses to be successful in transitioning to safe and effective practice. I assumed participants were able to follow written instructions, provide accurate information regarding beliefs, perceptions, and use of active learning strategies within a face-to-face course they personally taught; to accurately report percentage of grades earned in the course; and to answer truthfully as no professional evaluation or judgment was attached to their responses. The assumptions that each participant has similar

abilities to reflect and recall the desired information are essential to the foundation of the study.

Scope and Delimitations

One of the primary goals of this study was to identify the relationship between the use of active learning strategies in undergraduate registered nursing programs and the percent of students that passed the course. Respondents were asked to report on experiences with active learning strategies in a face-to-face, undergraduate registered nursing course that they had recently taught. Data were analyzed to identify a relationship between faculty beliefs and perceptions about SCALS, the use of SCALS in the classroom, and student success in the course. Constructivism provides an appropriate theoretical framework for research into the use of active learning strategies and study findings would be generalizable to educational fields other than nursing.

Alternate research methods were also considered prior to final selection. A qualitative design employing interviews and narrative data regarding active learning strategies was also considered for this study, but it was determined that a quantitative design was better suited to explore the relationship between variables. An experimental design was also considered but decided against due to the potential conflict in interest associated with conducting the study in my workplace and time constraints associated with conducting it elsewhere.

A delimitation of this study involved the population of nursing faculty. Recent nursing school graduates were originally considered; however, information from nursing

faculty was determined to provide richer and more relevant data regarding the use of SCALS.

Another delimitation of this study involved the selection of the theoretical framework. Malcolm Knowles' (1984) adult learning theory was originally considered to provide theoretical rationale for this study as it focuses on the development of knowledge in adult learners. Knowles' theory holds a set of assumptions about how adults learn, but Bruner's (1977) constructivist theory was ultimately selected to provide the theoretical framework for this research, as it encompasses basic tenets of the adult learning theory without limiting the age of the learner. Consistent with the principles of constructivism, active learning strategies allow faculty members to guide learning by providing students with opportunities to apply and develop knowledge independently thereby developing essential critical thinking skills. An additional delimitation involves excluding additional variables that may have also affected academic success.

Limitations

Several limitations associated with this study were identified. First, data were collected using self-ratings as the basis of measurement. Self-reporting is the most practical way of measuring experiences with active learning, as observation would have been both cost and time prohibitive. Second, no causal relationship was identified, as I did not attempt to manipulate or control study variables. Third, limitations to convenience sampling excluded the following extraneous variables: age and intelligence differences between participants, type of undergraduate registered nursing program, admission

criteria, support systems available to the student throughout the program, work/family responsibilities, and effort put forth in the course.

Significance

A review of current literature revealed significant research into the use and efficacy of student-centered learning has been conducted in various elementary and secondary education fields of study including science, technology, and mathematics. Several research studies included higher education, but the relationship between student-centered methods implemented into undergraduate registered nursing programs and student success remains unclear (Duane & Satre, 2014; Gorski et al., 2015; Waltz et al., 2014; Wright, 2011). Findings from this study provide insight into the use of SCALS in undergraduate registered nursing classrooms and relationships with student success.

In response to reports that newly graduated nurses are inadequately prepared for practice (IOM, 2010; Kavanagh & Sharpnack, 2021; NCSBN, 2022), nursing programs continue to search for ways to improve student outcomes (Gorski et al., 2015; Wright, 2011). Student-centered learning environments shift the focus from the person sharing new information, the teacher, on to the individual assimilating new information, the student. Research studies that identify a relationship with the use of SCALS and academic outcomes in undergraduate nursing courses would provide evidence-based findings to facilitate the development of life-long learners and increase the number of competent nurses prepared to successfully enter the workforce.

Nursing is a fundamental component of the American health care system, and nurse researchers can affect positive social change by conducting studies that expand the

base of knowledge that practice is based upon. Whether at the bedside, in the community, or in the classroom, research is an essential step in identifying best practices that will meet the complex demands associated with the continuously evolving state of healthcare. Improved student learning outcomes ultimately translate into nurses who are better prepared to provide safe, competent, and quality nursing care thereby improving patient outcomes. This study may contribute to positive social change if nurse educators and administrators use the findings to guide teaching strategies used in the classroom.

Summary

SCALS identified throughout the literature refer to various interventions including flipped classrooms, group activities, peer teaching, gaming, brainstorming, role-playing, and team-based learning (Swanson et al., 2019). Rationale for implementation include a need to improve critical thinking skills and the ability to apply knowledge to changing patient conditions (Bristol et al., 2019; Fero et al., 2009; Forneris & Fey, 2018; IOM, 2010; Kavanagh & Sharpnack, 2021; NCSBN, 2022).

Historically, nursing faculty have used traditional teaching methods to present lectures while students passively receive information. Problems with low NCLEX-RN pass rates, challenges associated with transition to practice, a growing shortage of nurses, and the increasingly complexity of the healthcare environment have precipitated a turning point in educational practices. A call for the transformation of nursing education has led to implementation of active learning strategies that engage students in the process of constructing knowledge to improve learning outcomes and increase critical thinking skills. Bruner's (1977) theory of constructivism served as a framework for reviewing

literature on active learning and academic success, guiding collection and interpretation of data, as well as providing a way to apply the information and findings in an effective manner. I present a review of the literature in Chapter 2, which supports the need for additional research into the use of active learning strategies in undergraduate registered nursing education.

Chapter 2: Literature Review

Introduction

Traditional American teaching methods were originally developed for elementary programs focused on teaching children. These methods centered on environments with the teacher standing at the front of the room as the center of instruction (Blumberg, 2019). Even with advances in technology and innovative practices, traditional teaching methods are still commonly used today (Fiedler, et al., 2014; Hannafin & Hannafin, 2010). In the typical classroom, teachers are viewed as subject matter experts, presenting textbook information, expecting students to memorize content, and guiding them to identify correct responses to standardized questions (Bleicher, 2014; Blumberg, 2019; Hodge, 2010). In traditional teacher-centered classrooms, the instructor presents the information in a lecture format and students passively receive content. This format does not provide opportunities for the interaction and engagement with content that is necessary for developing a deep understanding of the material (Swanson et al., 2019), but it continues to be the primary methodology used in most nursing classrooms.

Undergraduate registered nursing faculty continue to report use of established curricula, learning objectives, lessons, activities, and assessments developed by the textbook publishers to guide content presentation, knowledge retention, and evaluation of learning outcomes with the goal of endowing students with the knowledge, skills, and attitudes required of an entry-level nurse. Due to various reasons, teachers tend to use familiar instructional methods, often based on personal experience (Blumberg, 2019;

Candela et al., 2006; Castaneda et al., 2021) to plan instructional activities focused on students meeting knowledge-based learning outcomes.

Using teacher-centered methods, faculty present new information while students passively receive information such as definitions, facts, and expected behaviors to various patient scenarios. Students are expected to memorize material and demonstrate knowledge retention by earning passing scores on quizzes and exams. Based on feedback from new graduates and employers and reports from key stakeholders, traditional teacher-centered methods that have been the predominant teaching method used by nurse educators no longer translates into the development of effective critical thinking skills required for successful transition to the workforce (Candela et al., 2006; Davis, 2011; Duane & Satre, 2014; Ellis, 2016; Fero et al., 2008; Giddens et al., 2020; Goodman et al., 2018; Hodge, 2010; Mennenga & Smyer, 2010; Montin & Koivisto, 2014; Romeo, 2010; Stanley & Dougherty, 2010; Waltz et al., 2014).

Organizations such as the NLN, NCSBN, and ANA reported newly graduated nurses are inadequately prepared for transition to the complexities required for current healthcare practice (IOM, 2010; Kavanagh & Sharpnack, 2021). The Future of Nursing report (IOM, 2010) made significant recommendations including the need for transformation of the current nursing education system. In response, undergraduate registered nursing programs across the United States have incorporated innovative teaching strategies and made changes to existing curricula and instructional methods to improve learner outcomes and to better prepare graduates to deliver high-quality nursing care (Ellis, 2016; Kavanagh & Sharpnack, 2021; NCSBN, 2022; Schmidt, 2010).

Common responses include updating curricula, making the transition to concept-based programs, incorporating simulation throughout curricula, and implementation of learner-centered, active learning strategies with the goal of increasing learning, critical thinking skills, academic success, and successful transition to the workforce.

Current literature supports the use of student-centered teaching in the form of various active learning strategies that shift the focus from the person sharing new information. However, few studies have examined these methods when applied in undergraduate registered nursing curricula (Ellis, 2016; Fiedler et al., 2014; Henson, 2015; Shin et al., 2015). Although research supports the benefits of learner-centered, active learning strategies (Blumberg, 2019; Bristol et al., 2019; Dear, 2017; Ellis, 2016; Shin et al., 2015; Waltz et al., 2014), teachers report various reasons for the widespread lack of consistent implementation (Baron, 2017; Bowles, 2006; Duane & Satre, 2014; Fiedler et al., 2014; Mennega & Smyer, 2010; Nolan & Nolan, 1997). Additional research is needed to identify the efficacy of these methods in preparing graduate nurses for practice. Identification of learning strategies that improve learning outcomes is essential to support rationale for implementation and for developing programs that prepare nurses to provide safe, efficient, and competent patient care. Critically thinking skills are required for nurses to provide competent patient care in today's complex healthcare environment (Alameida et. al., 2011; Benner, et al., 2010; Fero et al., 2009; Forneris & Fey, 2018; IOM, 2010; Kavanagh & Sharpnack, 2021). Best practices for developing and evaluating critical thinking skills through all levels of undergraduate registered nursing programs must be identified.

I seek to contribute evidence to address the problem of inadequate preparation of newly graduated registered nurses. Complex and evolving needs healthcare facilities, educational institutions, students, and the public compel nurse educators to train qualified, safe, and competent nurses. Reasons new nurse graduates are underprepared include content overload, outdated teaching methods, a shortage of qualified and experienced faculty, and challenges associated with teaching students how to critically think and apply knowledge to patient care situations (Bristol et al., 2019; Duane & Satre, 2014; Hains & Smith, 2012; Kavanagh & Sharpnack, 2021; Mennenga & Smyer, 2010). Proponents of constructivism see traditional teaching methods at the root of the underlying problem (Brandon & All, 2010; Chan, et al., 2016; Duane & Satre, 2014; Hannafin & Hannafin, 2010; Jensen et al., 2017; Xu & Shi, 2018). Previous research into the use of student-centered active learning strategies in undergraduate registered nursing education has failed to consistently identify clear recommendations and steps for implementation of evidence-based educational practices. A review of the literature identified five major problems in summarizing findings from recent studies: (a) wide variations in how research terms were defined, (b) inconsistent descriptions and criteria defining the attributes of the student-centered classroom for adults in undergraduate registered nursing education, (c) inconsistent training on, and inadequate knowledge about, various types of SCALS, (d) personal and professional barriers to implementation of SCALS, and (e) insufficient research into the effects/benefits of student-centered, active learning methodologies on learning outcomes in undergraduate nursing programs. The purposes of this study are to explore (a) the relationship between a nurse educator's

use of SCALS and the percent of students that successfully completed the course, (b) the relationship between an educator's self-perception of their learner-centeredness and the use of SCALS, and (c) the relationship between an educator's beliefs about learner-centeredness and the use of SCALS.

A review of literature regarding student-centered learning was necessary to examine the history, development, current applications, and benefits in undergraduate registered nursing education. In this literature review, I focused on five primary topics: student/learner-centered learning, active learning methodologies, faculty and student perceptions as related to implementation of these innovative methodologies, and achievement of student learning outcomes.

Chapter 2 highlights the literature search beginning with a statement of the problem citing previous research as evidence that the problem is current and relevant. A discussion of seminal research into constructivism (Bruner, 1977; Piaget, 2003) provides a framework for the current study and for relating new findings. Major sections of this chapter address definitions of relevant terminology, concepts of student-centeredness, active learning in nursing education, assumptions, scope and delimitations, and limitations related to the study design and bias. The chapter ends with a summary of relevant literature illustrating the gap addressed in this study.

Literature Search Strategy

The literature review method included: inclusion and exclusion criteria to identify potentially relevant articles, search strategies to retrieve articles, abstract review protocols, and a system of scoring published studies for completeness and relativity to

this study. To be considered relevant, the article had to address adult learning, learner-centered, student-centered, or active teaching/learning methodologies. In addition, the article had to have potential or actual applicability to undergraduate registered nursing education. The focus was on journal articles that provided data from quantitative studies conducted within the last 5 years, but qualitative studies, systematic reviews, and older studies were also included to provide a comprehensive overview of the literature.

Seminal works on adult learning and educational theories as well and older studies were also included to illuminate the persistent nature of the problem. To demonstrate saturation of the topics, standard search strategies were employed involving the querying of the following education and health science online databases: ERIC, CINAHL, MEDLINE, ProQuest, PubMed, and Thoreau. Key words used in the search include *student-centered; learner-centered; active learning; undergraduate registered nursing programs; transforming nursing education; adult education; faculty and student experiences with student/learner-centered, active learning; learning outcomes; and student success.*

Theoretical Foundation

Bruner's (1977) theory of constructivism provides a theoretical framework for exploring student-centered learning strategies in nursing education. Constructivist learning activities, based on the original work of Jean Piaget (2003), promote knowledge development, attainment, and retention. Constructivism provides an epistemological viewpoint on the acquisition of knowledge for the learner and a synchronized lens for

examining the efficacy of student-centered interventions (Bishop, et al., 2014; Brandon & All, 2010; Duane & Satre, 2014; Piaget, 2003; Xu & Shi, 2018).

Piaget (2003) believed that the acquisition of knowledge is a life-long constructive process in which learners organize information and experiences considering existing schemes of thought (Hrynchak & Batty, 2012). According to Piaget's theory, knowledge is generated from an interaction between an individual's experiences and their ideas (Kaufman, 2003; Piaget, 2003). Piaget was the first to formally study cognitive development in children. It was generally assumed that children were merely less competent thinkers than adults, but Piaget's work showed that children think in distinctly different ways than adults (Hrynchak & Batty, 2012; Piaget, 2003).

Hrynchak and Batty (2012) discussed four primary principles of the Piaget's theory:

- 1) Knowledge is constructed by the learner, not transmitted by the teacher,
- 2) Learning is based on prior knowledge,
- 3) Learning should be an active process relevant to the learner,
- 4) Building knowledge requires time, effort, and purposeful reflection.

Constructivists purport learners develop metacognition or awareness of their learning process and their ability to control these processes can be enhanced (Hrynchak & Batty, 2012; Xu & Shi, 2018). This is particularly important for nursing students because if they can understand how they learn, they will be able to carry this process with them into the future to apply their knowledge and develop critical thinking skills each time they encounter new patients and different situations (Brandon & All, 2010; Bristol et

al., 2019; Fero et al., 2009; Forneris & Fey, 2018; Hagler, et al., 2018; Chan, et al., 2016; Duane & Satre, 2014; Jensen et al., 2017).

A fundamental premise of student-centered learning is the belief that responsibility for learning should rest with the learner rather than with the teacher (Blumberg, 2019; Bristol et al., 2019; Xu & Shi, 2018). Student accountability for learning and the process by which nursing students build new knowledge upon prior experiences and prerequisite knowledge is consistent with and reflected in constructivist and adult learning theories. Piaget's (2003) theory also encourages the development of an awareness and understanding of one's own thought processes while learning. Student-centered learning as an active process requires effort and interventions that are relevant to the nursing student.

Bruner (1977), influenced by Piaget's (2003) cognitive development theory about learning in children, emphasized the role of the teacher, language, and instruction. He proposed that different and unique problem-solving processes were used by adult learners and that social interaction lay at the root of learning. The theory of constructivism operates on four major assumptions:

- 1) new information is transformed and interpreted based on previous learning
- 2) assimilation and accommodation of new information leads to new constructions
- 3) the ability to hypothesize, predict, manipulate, and construct knowledge is more meaningful learning than memorization of facts

- 4) meaningful learning occurs through reflection and linking new information to existing knowledge

According to Bruner (1977), students are active learners who construct knowledge through interactions with peers and with the teacher. He stressed the role of the teacher should not be to teach information by rote learning, but instead to facilitate the learning process and development of the ability to use learned material (Bruner, 1977).

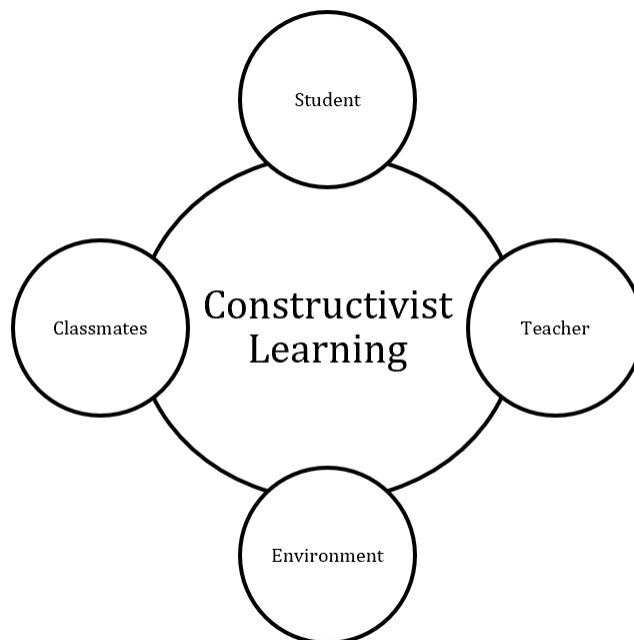
Consistent with Bruner's (1977) theory of constructivism, student-centered learning activities allow faculty members to guide learning by providing students with opportunities to learn independently and then actively use or apply the information learned (Henson, 2015; Xu & Shi, 2018). Teaching strategies consistent with Bruner's principles include:

- empowering student's to be responsible and accountable for their own learning;
- adapting content, instructional strategies, and interventions based on student responses;
- asking thoughtful, open-ended questions;
- encouraging students to interact, both with the teacher and with one another;
- allowing adequate time for students to formulate answers and respond after posing questions;
- asking students to elaborate on their responses;
- encouraging students to reflect on experiences and predict future outcomes.

According to Bruner, learning is an active process involving the student, classmates, the environment, and the teacher (see Figure 2).

Figure 2

Central Concepts of Bruner's Constructivist Learning Theory



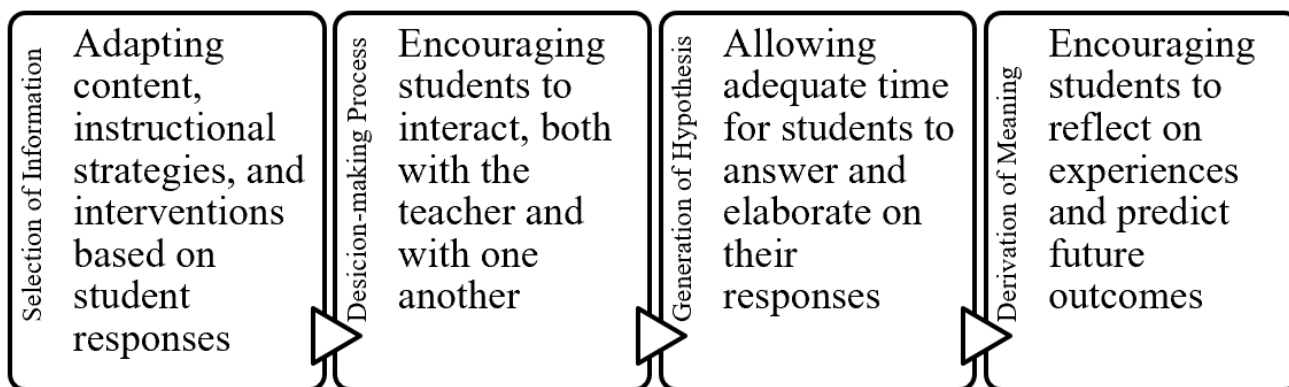
Research articles found throughout the literature have applied constructivism to studies investigating various aspects of learning. Brandon & All (2010) conducted an analysis of the theory of constructivism and examined the active process of learning where individuals construct new knowledge based upon current or past knowledge. In a study conducted by Duane & Satre (2014), constructivism provided insight into the use of collaborative testing to improve learning of essential nursing skills. Research findings identified by Jensen et al., (2017) and Xu & Shi (2018) suggested learning improvements

were identified after implementation of a flipped classroom which is an active learning strategy.

Important outcomes of learning include not just the concepts and problem-solving procedures, but also the ability to apply learned information to different circumstances and in new situations. Bruner's theory of constructivism provides the theoretical rationale for research into strategies that facilitate the development of knowledge in adult learners. Bruner (1977) described the process of learning as involving (a) selection of information, (b) decision-making, (c) generation of hypotheses, and (d) derivation of meaning from information and experiences (Figure 3).

Figure 3

Process of Learning



Assumptions

Theories are constructed to explain, predict, and understand the world and, in many cases, to challenge existing knowledge within the limits of bounding assumptions (Abend, 2018; Creswell, 2014; Swanson, 2013; Xu & Shi, 2018). Assumptions about the researcher's role are critical to the concept of study. Responsibilities of faculty teaching a

course, as outlined by the Ohio Board of Nursing (2022) provided a basis for inclusion criteria used in this study. The belief that a concept can be measured objectively through examining variables of study directed the selection of research tools and methods of measurement. Data were analyzed for the presence of patterns which may, in turn, provide the foundation for the development of new or revised theories to explain the relationship between the variables of study (Creswell, 2014).

One assumption of constructivism is that new knowledge is built upon current knowledge and that learning is an active process of that construction (Brandon & All, 2010; Chan, et al. 2016; Xu & Shi, 2018). Another assumption is that knowledge is constructed in collaboration with others (Duane & Satre, 2014; Jensen et al., 2017) through active processes in which learners construct new ideas or concepts based upon existing knowledge (Brandon & All, 2010; Xu & Shi, 2018).

Additionally, Knowles' theory of adult learning makes several assumptions about the acquisition of knowledge: (a) adults need to understand the reason for learning something (b) adults need to learn through experience, (c) adults utilize a problem-solving approach to learning, and (d) adults learn best when immediate relevance of the topic is evident (McDonough, 2014; Rodrigues, 2012).

Constructivism has been applied to cognitive development in a wide variety of settings ranging from elementary and middle school (Jensen, et al., 2017; Kamii & Ewing, 1996) and with adults in higher education (Duane & Satre, 2015; Henson, 2015), online learning environments (Wu et al., 2012; Xu & Shi, 2018) and workplace settings (Hannafin & Hannafin, 2010; Hodge, 2010; Knowles, 1984; McDonough, 2014;

Rodriguez, 2012). The theory of constructivism has also provided the foundation for other research studies into learning of adult undergraduate registered nursing students (Baron, 2017; Brandon & All, 2010; Bryer & Peterson-Graziose, 2014; Chan, et al., 2016; Duane & Satre, 2014; Matthews-Smith et al., 2001; Nolan & Nolan, 1997).

Therefore, the theory was a logical choice to guide this study on the relationship between the use of active learning methodologies and learning outcomes in undergraduate registered nursing classrooms.

Jerome Bruner's theory of constructivism was chosen to provide a theoretical framework for this study focused on student-centered learning strategies in nursing education as it provides concepts, terms, and definitions that are relevant to the topic of study. It also specifies student-centred, active learning variables that influence learning outcomes. Results of this study build upon the existing theory by examining measurable data and expanding its application into the field of nursing education.

Literature Review Related to Key Variables and Concepts

Consistent with the theory of constructivism, SCALS allow teachers to guide learning by providing students with opportunities to engage with material independently and in collaboration with the instructor and fellow classmates (Bruner, 1977; Henson, 2015; Xu & Shi, 2018). Early research focused on implementation and effectiveness of these strategies in elementary education. Studies conducted in higher education have explored their application in general education, math, science, organizational development, and computer technologies (Battle & Tyson, 2018; Beckers et al., 2021; Castaneda et al., 2021; Dear, 2017; Dewi et al., 2019; Dong et al., 2019; Goodman et al.,

2018; Mangram et al., 2015; Rodrigues, 2012; Swanson et al., 2019; Van Horne & Murniati, 2016; Xie et al., 2018; Xu & Shi, 2018) but few studies have examined their use in undergraduate registered nursing programs (Battle & Tyson, 2018; Dear, 2017; Hannafin & Hannafin, 2010; Hwang, 2021; Rodriguez, 2012; Wu et al., 2012).

Throughout current literature, SCALS, including interventions, definitions, and terminology, vary widely making generalization, synthesis of findings, and replication of studies difficult (Creswell, 2014; Polit & Beck, 2017; Romeo, 2010). Key concepts for this study are *student-centered teaching*, *active learning*, and *student success*. These concepts are discussed and defined in the following sections.

Student-Centered Teaching

A common thread throughout research on student-centered methodologies, and a central theme of this study, involves students/learners holding the primary role and maintaining ultimate responsibility for their own learning (Blumberg, 2019; Chan et al., 2016; Jensen et al., 2017; Peneva et al., 2017). Descriptions of student-centered methodologies found throughout the literature vary and include; (a) activities that engage learners and encourage thinking (Baron, 2017; Bristol et al., 2019); (b) involvement or responsibility for curriculum design and assignment/topic selection (Faulcon, 2015; Jensen et al., 2017; Pitt et al., 2016); (c) or a shift in power from the teacher to the learner (Blumberg, 2019; Forneris & Fey, 2018; Schnetter et al., 2014; Shah et al., 2014). Hodge (2010) identified the terms as being synonymous. Although many research studies have examined the concept of student-centered learning, wide variations in how the term is defined and interpreted limits the usefulness, applicability, and generalizability of

findings.

Throughout the literature there are not only variations in definitions, but the term *student-centered* is universally used to refer to numerous strategies, interventions, and concepts. It has been used to describe educational programs, instructional approaches, academic-support strategies, and use of technology designed to address the distinct learning needs, interests, aspirations, or cultural backgrounds of students (Candela et al., 2006; Chang, 2013; Fero et al., 2009; Fiedler et al., 2014; Nolan & Nolan, 1997; Schaefer & Zygmunt, 2003). The term has also been used to describe methods that allow students to actively construct, design, and choose their own learning opportunities (Dear, 2017; Hains & Smith, 2012; Montin & Koivisto, 2014). In 1978, the ANA used the term *self-directed learning* to refer to the learner taking initiative and responsibility for their learning process (Nolan & Nolan, 1997). Findings from a review of the literature can be summarized to define student-centered learning as activities that emphasize the following characteristics:

- Active, rather than passive, learning
- Deep, rather than surface, learning and skill development
- Expectations of student responsibility and accountability for knowledge attainment
- Sense of student autonomy toward the learning process
- Mutual respect within the student-teacher relationship
- Interdependence between the teacher and student
- Reflexive approach from both the teacher and the student

Research studies have reported positive outcomes from student-centered methodologies in classrooms across various academic subjects and grade levels (Kamii & Ewing, 1996). Results indicated that student-centered instructional designs increased knowledge, improved logical reasoning, increased critical thinking, retention, and accountability (Duane & Satre, 2014); fostered acquisition of clinical skills and competencies, and promote critical thinking (Forneris & Fey, 2018; Goers et al., 2022; Kaplan et al., 2017); and created self-directed, life-long learners, thereby narrowing the theory-practice gap (Fero et al., 2009; Nolan & Nolan, 1997). Studies reviewed provided findings consistent with positive learning outcomes and none identified negative results related to the adoption or implementation of student-centered strategies when used with adult learners. For the purposes of this study, the term *student-centered* refers to teaching that shifts the responsibility for learning from the teacher to the student (Blumberg, 2019; Mostrom & Blumberg, 2012).

Active Learning

Active learning is a different, but related, term that also encompasses a wide variety of concepts throughout the current literature complicating synthesis of information. The term has been used to describe methodologies that involve the student as an active participant in the learning process (Blumberg, 2019; Hurst, 1985; Middleton, 2013), as a measure of “time and energy adult learners invest in educationally purposeful activities” (McDonough, 2014, p. 10), and to describe interventions that support collaborative learning with the teacher or fellow classmates (Beckers et al., 2021; Van Horne & Murniati, 2016). When applied in undergraduate registered nursing education,

the term often refers to specific interventions including, flipped classrooms, group activities, peer teaching, gaming, brainstorming, role-playing; team-based learning (Swanson et al., 2019); high impact practices including internships, capstone experiences, and studying abroad (Battle & Tyson, 2018); and the use of technology in the classroom such as simulation and automated response systems (Jeffries, 2012; Van Horne & Murniati, 2016). Active-learning lesson plans often include preparatory assignments involving students reading, analyzing content, or reviewing material with activities requiring application of the information occurring during class (Hurst, 1985; Kowalski & Horner, 2015; Wonder & Otte, 2015). Teachers facilitate the learning process through guidance, direction, and feedback provided during the classroom activity (Beckers et al., 2021; Mangram et al., 2015; Missildine et al., 2013; Peneva et al., 2017; Waltz et al., 2014).

Consistent with constructivism and adult learning theories, research supports active participation in the learning process as an essential component of the development and retainment of knowledge. Deeper learning and retention of new knowledge occurs through active engagement with the material and collaborative interaction between the faculty, the students, and the content. Ellis (2016) defined student-centered teaching as a methodology that incorporated a variety of teaching strategies and recommended incorporating the innovative pedagogy to enhance student learning and knowledge retention in healthcare programs. Bristol et al., (2019) were unable to identify a definitive relationship between the use of active learning strategies and success of undergraduate registered nursing students and suggested that future researchers collect and report

demographic data and provide respondents with a clear definition of active learning. Jensen et al. (2017) suggested improvements originally attributed to implementation of a flipped classroom strategy were the more likely the result of students being actively engaged with the material. As undergraduate registered nursing programs continue to implement innovative teaching strategies, additional research is needed to evaluate their efficacy and identify best practices for improving lesson, course, and program outcomes. The ability to apply knowledge and demonstrate critical thinking skills increases not only safety and quality of care, but also competency, confidence, and the likelihood of successful transition to practice.

Transition to Practice

Experienced nurses provide quality patient care because they can critically think, recognize changes in condition safely and efficiently, and identify appropriate plans of action as required. Recently, concerns regarding the efficacy of traditional teaching methods in preparing newly graduated nurses to demonstrate these abilities have been raised (Bryer & Peterson-Graziose, 2014; Docherty et al., 2018; Ellis, 2016; Fero et al., 2009; Forneris & Fey, 2018; Hurst, 1985; Ironside, 2004; Kantar, 2014; Romeo, 2010; Spector et al., 2015). These concerns have prompted a call to transform undergraduate nursing programs and implement strategies that will better prepare new graduates for successful transition to practice.

Research into the transition, training, and retention of newly graduated nurses has identified a relationship between undergraduate preparation, successful transition to practice, patient safety, patient outcomes, and satisfaction rates of nursing staff and

patients (Bristol et al., 2019; Kavanagh & Sharpnack, 2021; Middleton, 2013; Spector et al., 2015). Reports published by the NLN, NCSBN, and ANA, cite the increasing complexity of healthcare, technological advances, outdated teaching methods, and content overload as just a few of the reasons new nurses struggle to successfully transition into practice (IOM, 2010). Recommendations for addressing these issues include implementing SCALS at the undergraduate level, incorporation of concept-based curricula, and institution of preceptorship and internship programs in acute care settings.

NCLEX-RN Licensure Exam

The National Council Licensure Examination (NCLEX-RN) exam is a standardized exam designed to determine whether graduate nurses are prepared for entry-level practice. The NCLEX-RN exam consists of test items written primarily at the application and analysis level of Bloom's taxonomy (NCSBN, 2022). Performance on the exam measures skill in analysis, reasoning, research, and decision making as these skills relate to the practice of nursing (NCSBN, 2022). Upon completion of approved programs, graduates sit for the licensure exam prior to beginning practice as nurses.

The NCLEX-RN licensure exam serves as the standard measure of competence for graduates and first-time NCLEX-RN pass rates provide a benchmark for evaluating the effectiveness of prelicensure nursing programs. Educational institutions use these first-time pass rates to guide educational practices and curriculum reform (Kaplan et al., 2017). Individual state boards of nursing, overseen by the NCSBN, monitor, regulate and approve pre-licensure nursing programs conducting regular surveys to evaluate

compliance with established guidelines and to compare NCLEX-RN pass rates with national standards.

Summary and Conclusions

Studies conducted to examine the effectiveness of specific active learning strategies such as simulation (Boulet, et al., 2011; Docherty et al., 2018; Montenery et al., 2013), case studies (Bristol et al., 2019; Chan et al., 2016; Davis, 2011; Shah et al., 2014;) and flipped classrooms (Jensen et al., 2017; Kowalski & Horner, 2015; Xu, 2018) have provided insight into the effects on learning objectives related to the topic. To date, however, insufficient evidence has been found supporting or refuting the effects of these innovative teaching methods when incorporated throughout an undergraduate nursing curriculum. Amid a paradigm shift from traditional teacher-centered teaching to SCALS and methodologies, additional research is needed to identify best teaching practices and offer support for faculty training and implementation of these innovative strategies throughout undergraduate registered nursing curricula.

There is a preponderance of evidence supporting the use of SCALS but wide variations in the way key terms were defined make it difficult to collect, sort, and organize data in a meaningful manner. The lack of specificity also hinders application of findings to future research and current practice. Recent studies identifying the benefits of various teaching strategies on lesson objectives are formative in nature. The lack of research into the summative effects of these strategies when used in undergraduate registered nursing courses creates a gap in the literature regarding effects of, or relationship between, active learning and academic success. Additionally, research is

needed to examine the beliefs and perceptions of nursing faculty to identify factors that influence the implementation of these strategies. This study examined the relationship between the use of SCALS and successful completion of the undergraduate registered nursing course. Relationships between beliefs and perceptions of the nursing faculty and implementation of these strategies were also investigated. Chapter 3 presents the process for participant selection, explains the research method, and addresses limitations, threats to validity, and ethical considerations.

Chapter 3: Research Method

Introduction

The purposes of this study are to explore (a) the relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course, (b) the relationship between an educator's self-perception of their learner-centeredness and the use of SCALS, and (c) the relationship between an educator's beliefs about learner-centeredness and the use of SCALS.

This chapter includes a rationale for the research design, details of the methodology, including target population, sampling strategy, recruitment, participation, data collection procedures as well as instrumentation and operationalization of constructs. I also present the data analysis plan and threats to validity.

Research Design and Rationale

I conducted a descriptive correlational study using a cross-sectional design to examine the relationship between variables, test hypotheses, and answer the research questions posed within this study. Correlation refers to a statistical relationship between variables such that changes in one variable impact another (Warner, 2021). Descriptive statistics were used to identify the sample mean, standard deviation, frequency, and distribution of scores on the ELCTNEQ and final course grades (Table 2).

I chose a cross-sectional design to obtain a representative sample of the larger group. A survey was selected as a flexible, efficient, time and cost-effective way to collect data from many eligible participants at a single point in time (Creswell, 2014).

The design also allowed me to simultaneously compare multiple variables related to the topic of interest.

I examined the relationship between the amount of exposure to active learning strategies in a course and the percent of students that earned a passing grade. I also assessed whether there was a correlation between the educator's self-perceptions of their learner-centeredness, beliefs about learner-centered teaching, use of active learning strategies in the classroom, and student success in the course. Many studies into active learning strategies have utilized a qualitative design and this quantitative study will provide additional data to advance knowledge on the topic.

Research Questions

The research questions addressed by this study are:

RQ1: What is the relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course? The independent/predictor variable was the use of active learning strategies in an undergraduate registered nursing program as reported on the ELCTNEQ. The dependent/outcome variable was the percent of students that successfully complete the course by earning a passing grade.

*H*₀1: There is no relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course.

*H*₁1: There is a relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course.

RQ2: What is the relationship between an educator's self-perception of their learner-centeredness and the use of SCALS? The independent/predictor variable was the educator's self-perception of their learner-centeredness as measured by participant selection on Survey Question 10. The dependent/outcome variable is the use of SCALS in the course as reported on the ELCTNEQ.

H₀2: There is no relationship between an educator's self-perception of their learner-centeredness and the use of SCALS.

H₁2: There is a relationship between an educator's self-perception of their learner-centeredness and the use of SCALS.

RQ3: What is the relationship between an educator's beliefs about learner-centeredness and the use of SCALS? The independent/predictor variable was the educator's self-perception of their learner-centeredness as measured by participant's combined score on Survey Questions 8 and 9. The dependent/outcome variable was the use of SCALS in the course as reported on the ELCTNEQ.

H₀3: There is no relationship between an educator's beliefs about learner-centeredness and the use of SCALS.

H₁3: There is a relationship between an educator's beliefs about learner-centeredness and the use of SCALS.

Extraneous Variables

Extraneous variables, classified as (a) recognized or unrecognized, and (b) controlled or uncontrolled, can affect the data analysis and may interfere with identification and understanding of the relationships between variables (Creswell, 2014;

Grove et al., 2013). Although not included in the scope of this study, the ELCTNEQ instrument gathered information on each of the following:

- **Type of degree program.** Student demographics, teacher qualifications, curricula, and academic effort may vary between diploma, associate, and baccalaureate programs.
- **Location of the course.** Academic effort and student motivation may vary based on placement of the course, in relation to the entire program sequence.
- **Content of the course.** Different topics may, by their very nature, lend themselves more readily to active-learning strategies (Branney & Priego-Hernandez, 2018).
- **Number of times the teacher has taught the course.** Motivation and time to implement active learning strategies may be influenced by previous experience with the course (Jensen et al., 2017).
- **Presence of a clinical component of the course.** A clinical component can be considered an active learning strategy and offers an additional opportunity for knowledge development (Goers et al., 2022; Holland, et al., 2017; Kaplan et al., 2017; Lewallen & DeBrew, 2012; Murray, 2013; Weimer, 2015; Wonder & Otte, 2015).
- **Previous exposure to SCALS.** Previous training in active learning strategies, either formal or informal, may have a direct influence on the beliefs, perceptions, and use of these strategies in the classroom (Bowman et al.,

2022; Bryer & Peterson-Graziose, 2014; Fuller & Mott-Smith, 2017; Hwang, 2021; Kavanagh & Sharpnack, 2021).

- **Faculty beliefs about SCALS.** Teacher-centered and student-centered paradigms differ in purpose, criteria for success, underlying learning theory, and strategies for implementation (Blumberg, 2019; Bowman et al., 2022; Hwang, 2021; Knowles, 1984; Knowles et al., 2015; Weimer, 2015; Young & Patterson, 2007).
- **Self-perceptions about personal teaching style.** Beliefs related to the learner, self-efficacy, and pedagogy guide teacher interactions and influence teaching practices in the classroom (Barbour & Schuessler, 2019; Bowman et al., 2022).
- **Age.** Age may influence an instructor's exposure, motivation, and energy to engage in new and innovative teaching methods.
- **Gender.** Data regarding gender were gathered to identify gender-related influences.
- **Ethnic heritage.** Data regarding gender were gathered to identify ethnicity-related influences.
- **Years of experience teaching in nursing education.** Professional experience as a nurse educator may provide familiarity and confidence with various teaching strategies. Conversely, instructors that have been teaching for a long time, may find themselves reluctant to change (Barbour & Schuessler, 2019; Bleicher, 2014; Shah et al., 2014; Weimer, 2015).

- **Educational background.** Data regarding educational background were gathered to identify influences based on highest degree attained (Baron, 2017; IOM, 2010; Weimer, 2015).
- **Academic rank (position).** Data regarding academic rank were gathered to identify title-related influences.

Strengths and limitations of this design were taken into consideration when planning the research study. Consistent with a correlational approach (Creswell, 2014), there was no treatment, or intervention in this study, and data collected were treated as a single group. Correlational studies are designed to investigate the relationship between two or more variables to determine the existence of a statistically significant relationship (Grove et al., 2013). As identification of a cause-and-effect relationship was not the goal, a descriptive, correlational design was the appropriate choice to examine relationships between the study variables.

The cross-sectional survey allowed for examination of variables at a specific point in time. It also allowed the ability to make inferences about the sample group being surveyed and generalize the findings to the larger population (Creswell, 2014).

Methodology

Population

The study population consisted of nurse educators teaching in undergraduate registered nursing programs in the United States. As of May 2021, the United States Bureau of Labor Statistics reported 68,060 post-secondary nursing instructors (USBLS, 2021).

Sampling and Sampling Procedures

The primary goal of sampling is to obtain a group of participants that represents a larger population of interest to study and produce accurate generalizations about the larger group (Creswell, 2014). Due to relative time and cost benefits, convenience sampling, a non-probability method, was used for this study.

After receiving approval from the Walden University Institutional Review Board (IRB), I used publicly accessible mailing lists to send electronic invitations to registered nurses licensed to work in Ohio and Florida. Invitations included a brief description of the study, eligibility criteria, confidentiality, and consent agreements (Appendix A). Participants gave consent to participate by clicking on the appropriate button and eligibility was confirmed through screening questions.

Inclusion criteria for this study were (a) registered nurses with active, unencumbered licenses; (b) held a position such that they were responsible for designing, planning, and incorporating teaching strategies designed to assist a nursing student to meet the course objectives or outcomes within the past two years (OBN, 2022); and (c) taught a face-to-face course in an approved undergraduate registered nursing program within the past 2 years. Participants that met all eligibility criteria were directed to progress through the survey questions.

Exclusion criteria for this study were (a) registered nurses with lapsed or restricted licenses; (b) teaching assistants or faculty members that do not design or plan teaching strategies; (c) faculty that solely teach in licensed practical or vocational nursing programs; and (d) educators that had not taught a face-to-face course in the past 2 years.

Participants that failed to meet the eligibility criteria were directed to a screen that ended the survey and thanked them for their time.

Power Analysis

I used the G*Power Statistical Power Analysis program to compute the sample size required for this study (Faul et al., 2009). The G* Power program and manual were downloaded from the Universität Dusseldorf website at <http://www.gpower.hhu.de>.

For the first research question, sample size for simple linear regression was calculated using the G* Power program with α err prob of 0.05, power of 0.8, and a medium effect size of 0.15, which yielded a minimum sample size of 55.

For the second research question, sample size for simple linear regression was calculated using the G* Power program with α err prob of 0.05, power of 0.8, and a medium effect size of 0.25, which yielded a minimum sample size of 180.

For the third research question, sample size for simple linear regression was calculated using the G* Power program with α err prob of 0.05, power of 0.8, and a medium effect size of 0.15, which yielded a minimum sample size of 55. Of the original 193 responses received, 180 were determined to complete which met the power analysis requirements for RQ2, also satisfying the requirements of the RQ1 and RQ3.

Procedures for Recruitment, Participation, and Data Collection

Recruitment

The recruitment process began by contacting potential participants via email addresses obtained from individual state boards of nursing. The NCSBN oversees jurisdictional governmental agencies called nursing regulatory bodies, also known as

state boards of nursing, in each of the 50 states, the District of Columbia and four U.S. territories. Each of the 50 state boards were considered for potential recruitment. Four of the state boards (Idaho, New York, North Dakota, and Tennessee) do not release contact information to the public; 10 (Alaska, Colorado, Connecticut, Florida, Maine, Massachusetts, Nevada, New Jersey, Ohio, Oklahoma, Rhode Island, and Vermont) offered contact information free of charge through state management sites, with only two (Ohio and Florida) providing public access to email addresses. The remaining states charged varying fees for contact information for their licensed registered nurses. As such, participants for this study were recruited from Ohio and Florida.

A second recruitment method involved a publicly posted invitation on social media (Facebook) providing information about the study and a link to participate (see Appendix B). With approval from Walden University IRB, a public post with a link to the survey was posted to several Facebook pages including, but not limited to, my personal page (735 members), Show Me Your Stethoscope-A Nation of Nurses page (627K members). Individuals were able to invited to forward or share the link with others as desired.

Participation

I sent emails with a description of the study inviting individuals to participate. The invitation email included a link to complete the survey (Appendix A). Participants were able to access the survey through an email invitation or through a post on Facebook. The survey was designed to allow individuals to progress through the required steps in the following, specific order.

1. Individuals reviewed the consent form and provided consent by clicking “Agree.” If the participant clicked on “Disagree,” the questions ended, and the participant was taken to a screen thanking them for their time.
2. Answers to required screening questions ensured eligibility. If the participant answered no to any of the screening questions, the questions ended, and the participant was taken to a screen thanking them for their time. If the individual answered yes to all the screening questions, then they were allowed to begin the survey.
3. Survey questions were presented one question at a time, automatically advancing from one question to the next. The survey took each participant approximately 20 minutes to complete.
4. Participants were thanked for participating upon completion of the last question.

Data collection. I collected data using Google Forms, a web-based survey system. Links to the survey were sent via email and participants could confidentially complete the survey using a computer, laptop, cell phone, or other mobile device. The use of Google Forms allowed surveys to be collected anonymously without linking to participant emails. Once the survey was closed, all responses were transferred to a CSV file and then to SPSS. Follow-up procedures were not necessary for my study.

Instrumentation and Operationalization of Constructs

The ELCTNEQ was developed from a review of the literature to measure faculty behaviors indicating the use of learner-centered learning strategies in an undergraduate

nursing classroom (Ellis, 2016). Participants were asked to complete the 37 questions with a specific face-to-face course that they recently taught in mind. The first six questions were about the course, the next 4 were about their perception of learner-centered teaching, the next 21 were about the use of learner-centered teaching interventions in the classroom and the final six are demographic questions. The 21 questions about the use of learner-centered interventions were divided into four subsections supported by the literature:

- Process of Guiding Students
- Interactive Social Context
- Critical Thinking
- Reflection

Each category was operationalized using behavioral statements (Ellis, 2016). The instrument was designed to measure nurse educators' beliefs, perceptions, and behaviors indicating the use of learner-centered teaching (LCT) in the nursing classroom (Ellis, 2016). According to current literature and seminal works on adult learning, learner-centered teaching and active learning, the strategies identified in the ELCTNEQ questions are consistent with active learning strategies, thus making it suitable for this study (Barbour & Schuessler, 2019; Branney & Priego-Hernandez, 2018; Bristol et al., 2019; Burgess & Medina-Smuck, 2018; Chan, et al., 2016; Duane & Satre, 2014; Hwang, 2021; Jensen et al., 2017; Shah et al., 2014; Shatto et al., 2017; Weimer, 2015).

Participants were presented with behavioral statements regarding the use of active learning strategies with instructions to describe the frequency of use of each using a 4-

point scale (a) Rarely = 0-25% of the time; (b) Sometimes = 26-50% of the time; (c) Frequently = 51-75% of the time; or (d) Most of the time = > 76% of the time, yielding a composite score (Ellis, 2016).

Content validity of the ELCTNEQ was verified by a panel of experts and an overall reliability of Cronbach's alpha .94 was reported (Ellis, 2016). Reliability for each of the four components was: guiding (.89), interactive (.76), critical thinking (.84), and reflection (.87) (p.68). Cronbach's alpha estimates the internal consistency of a set of items, indicating how closely related a set of items are as a group, and how well the set measures a single construct (Polit & Beck, 2017). Values between 0.7 and 0.8 are considered to represent high reliability and acceptable (Creswell, 2014). As results suggest, the instrument is reliable and individual items are consistent with overall test results.

Operationalization.

Questions on the ELCTNEQ were designed to elicit information about specific behaviors and experiences that are indicative of learner-centered, active learning strategies rather than using labels referring to individual activities that the participant may, or may not, be familiar with. The variable of interest for this study was the use of active learning strategies which were measured using a composite score of responses to Likert-type questions 11-31 on the ELCTNEQ as previously described.

Student success served as the dependent variable of interest for the first research question. Participants were asked to report the percent of students that successfully completed the course by earning a passing grade (0-100%) in the class referenced while

completing the ELCTNEQ. Data were collected on a continuous, interval level of measurement.

Data Analysis Plan

I used SPSS version 27.0 software to analyze responses received. Once data were entered into the SPSS database, I cleaned and screened the data by running a frequency distribution on each variable to identify responses that were missing or did not fit the criteria required for participation. Missing data were replaced with the mean score for that measurement and submissions with responses that did meet requirements were removed. Of the original 193 responses received, 180 were considered complete and met criteria for inclusion.

The first research question addressed by this study was: What is the relationship between an educator's use of SCALS and percent of students that successfully complete the course by earning a passing grade. The null hypothesis was: There is no relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course. The alternative hypothesis was: There is a relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course.

The second research question was: What is the relationship between an educator's self-perception of their learner-centeredness and the use of SCALS? The null hypothesis was: There is no relationship between an educator's self-perception of their learner-centeredness and the use of SCALS. The alternative hypothesis was: There is a

relationship between an educator's self-perception of their learner-centeredness and the use of SCALS.

The third research question was: What is the relationship between an educator's beliefs about their own learner-centeredness and the use of SCALS? The null hypothesis was: There is no relationship between an educator's beliefs about learner-centeredness and the use of SCALS. The alternative hypothesis was: There is a relationship between an educator's beliefs about learner-centeredness and the use of SCALS.

Descriptive statistics included measures of central tendency (mean and median) and dispersion (standard deviation and range of scores) for the interval variables ELCTNEQ and SUCCESS. This allowed me to present a large amount of data in a manageable and understandable format (Creswell, 2014; Grove et al., 2013; Polit & Beck, 2017). Examination of descriptive statistics also allowed organization and summarization of numerical data to facilitate understanding of the phenomena of interest.

Simple linear regression was used to determine if the use of SCALS had a relationship to a student passing the course. A one-way ANOVA with post hoc analysis was conducted to see if faculty perception of their own learner-centeredness influenced the use of these strategies in the classroom. Specifically, if there was a statistically significant difference in the use of SCALS between faculty that perceived themselves as learner-centered and those that did not. The ANOVA test was conducted to compare the means between the groups and post hoc testing was used to explore any differences that may exist.

I also calculated a Cronbach's alpha on the ELCTNEQ instrument and each subscale to provide a measure of the internal consistency and describe the extent the items are inter-related and measure the same concept (Creswell, 2014).

Threats to Validity

Addressing threats to validity is essential to ensuring an instrument consistently measures the desired information. Research must use valid and reliable instruments to ensure the quality of information, findings, and conclusions (Creswell, 2014; Polit & Beck, 2017). Researchers focus on truth and accuracy to ensure quality of study findings. Ultimately, researchers conduct studies to contribute dependable knowledge or evidence that may guide practice decisions and further research into the topic.

External Validity

Threats to external validity are factors within a study that decrease generalizability of the results (Creswell, 2014). Due to their nature, correlational studies are generally considered to have low internal validity and high external validity because nothing is manipulated or controlled (Creswell, 2014; Polit & Beck, 2017). I assumed that data from participants was reported accurately and reliably and that the participants formed a representative sample of the population. The use of convenience sampling posed a risk of selection bias and decreased the potential for generalization to the greater population, but it was appropriate for reaching the subpopulation of nurse educators for the purposes of this study (Lehdonvirta et al., 2021). Testing reactivity, multiple treatment inference, interaction, and reactive effects are all potential threats to the

external validity of true experimental research (Creswell, 2014) and not correlational studies and therefore, were not addressed in this study.

Internal Validity

Internal validity refers inferences regarding cause-effect or causal relationships (Creswell, 2014). Non-experimental designs, such as used in this correlational study, inherently lack internal validity, and therefore, findings cannot be used to infer causation (Grove et al., 2013). As such, threats to internal validity, such as history, maturation, statistical regression, and experimental mortality were not considered problematic as I was not seeking to establish causation between variables.

Construct Validity

Construct validity defines how well a test or instrument measures the construct or variable of interest (Creswell, 2014). As reported, exploratory factor analysis resulted in two main factors supporting the guiding, critical thinking, and reflection components of learner-centered teaching (Ellis, 2016). Results determined the factor groups represented the conceptual basis of the instrument.

Statistical Conclusion Validity

Statistical conclusion validity (SCV) refers to the extent to which research data can be regarded as revealing a relationship between independent and dependent variables. According to Garcia-Perez (2012), SCV of a research study includes: (a) degree of statistical power to detect an effect if it exists, (b) risk that the study will reveal an effect that does not actually exist, and (c) how the magnitude of the effect can be confidently estimated. Careful analysis of the data ensured reasonable conclusions were drawn.

Extraneous variables, classified as (a) recognized or unrecognized, and (b) controlled or uncontrolled, can affect the data analysis and may interfere with identification and understanding of the relationships between variables (Grove et al., 2013). Limitations to convenience sampling include the following extraneous variables: age and intelligence differences between participants, type of undergraduate registered nursing program, admission criteria, support systems available to the student throughout the program, work/family responsibilities, and effort put forth in the course. Information about these variables were collected as part of the original instrument (Ellis, 2016). I recognize the potential influence these variables may have on student success but they were not included in the scope of this study.

Ethical Procedures

I designed this research study to collect data from human participants, thus the ethical principles of beneficence, respect for human dignity, and justice were employed (Creswell, 2014; Polit & Beck, 2017). I did not recruit participants from vulnerable populations nor was any protected health information collected. I recruited participants using email addresses provided by the Board of Nursing and online social media (Facebook) groups. Participants were presented with an introduction to the study and an invitation to participate. Informed consent was required before participation in the survey was permitted. In summary, there are no ethical concerns regarding: the treatment of human participants, recruitment process or material, or data collection. Further, no potential conflict of interest existed as I conducted the study outside of my work environment, and no incentives for participation were offered. Walden University

Institutional Review Board (IRB) approval #10-15-21-0254193 was obtained prior to starting data collection.

Confidential data were collected anonymously using Google Forms. Google Forms stored responses in a secure spreadsheet that can only be accessed with my personal account login and password. Participants were restricted from viewing the response summary and survey data are protected using Secure Socket Protocol (SSL) data encryption (support.google.com). Data were transferred to SPSS and stored on a password protected external hard drive upon completion of the survey. Data will be maintained for five years from the date of doctoral degree completion and then deleted.

Summary

In this chapter, I presented the research design with rationale, methodology, threats to validity and ethical concerns. This quantitative, descriptive, correlational study describes the strength and direction of the relationship between reported use of active learning strategies in the undergraduate nursing classroom and student success. Descriptive analysis of the research data to provides descriptions of the study group and inferential analysis allowed me to analyze data from the sample, and make generalizations, inferences, and predictions about the greater population (Polit & Beck, 2017). The population, recruitment, materials, data collection and storage were discussed. The data analysis plan was described and threats to validity were reviewed. Ethical issues were also discussed. Results of the study are provided in Chapter 4.

Chapter 4: Results

Introduction

The purposes of this study were to explore (a) the relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course, (b) the relationship between an educator's self-perception of their learner-centeredness and the use of SCALS, and (c) the relationship between an educator's beliefs about learner-centeredness and the use of SCALS.

In this chapter, I present a description of the data collection process including time frame, recruitment and response rates, sample population, and results of a basic univariate analysis. Results, descriptive statistics, and statistical analysis of findings are organized by research question.

Data Collection

I obtained permission from the Walden University IRB on October 15, 2021. Data collection began on November 1, 2021. I began emailing study invitations to nurses in Ohio and Florida via a Gmail mail merge and documented the process using Google Sheets. Responses did not include email addresses to maintain confidentiality of participants.

After attempting to send emails using a mail merge, I discovered that Google bulk mail restrictions limited users to send emails to no more than 100 recipients per day. I researched alternative options and found similar restrictions through free and options that required payment. I continued sending emails within the defined restrictions of 100 per day but limited responses were received using this method. Only seven responses were

received after sending more than 500 emails. Concerned with the low response rate and time sensitive barriers, I posted invitations to participate on Facebook on November 28, 2021.

Posting invitations through Facebook proved to be much more successful in soliciting participants. Only responses that met the inclusion criteria for this study were considered. Participants were required to give consent, have a current, unencumbered license as a registered nurse, and hold a lead faculty position in a face-to-face theory course within an undergraduate registered nursing program within the last two years. I monitored participation every few weeks and when responses slowed, I reposted the invitations on December 5, December 29, and January 12, 2022. I received responses from 193 participants and closed the study on March 5, 2022. I imported survey responses into SPSS 27 for analysis.

Demographic data collected included age, gender, ethnic heritage, years of experience teaching in nursing education, highest degree attained, and academic rank. According to demographic data reported by the NLN, most nurse educators are 46-60 years old, White, and female (NLN, n.d). Data presented in Table 1 show the demographics of the study sample. One hundred and fifty (83.3%) of participants were over the age of 40, 155 (86.1%) were White, and 169 (93.8%) were female, demonstrating that the sample is representative of the larger population of nurse educators.

Table 1*Demographics of Population Sample*

	<i>n</i>	%
Age		
< 25	0	0
26-30	3	1.7
31-39	27	15.0
40-49	60	33.3
50-59	53	29.4
60-69	35	19.4
> 70	2	1.1
Gender		
Female	169	93.9
Male	9	5.0
Prefer not to say	2	1.1
Ethnicity		
Native American	3	1.7
Asian	3	1.7
Black	9	5.0
Hispanic	3	1.7
White	155	86.1
Mixed	6	3.3
Other	1	0.6
Highest degree attained		
Baccalaureate	1	0.6
Master's degree	122	67.8
PhD	27	15.0
DNP	29	16.1
DNS/DSN/NP/DNSc	1	0.6

Univariate Analysis

Several unique variables were used in the statistical analysis of the data collected. Descriptions and methods of calculation are presented below.

BELIEFS Variable

The BELIEFS variable is the sum of scores from Survey Questions 19 and 20 that asked participants to rate their beliefs about learner-centered teaching when compared to student-centered methods. The first question was, “Based on my understanding of Learner-Centered Teaching, I believe it enhances deeper understanding of nursing concepts more than student-centered teaching.” The second question was, “Based on my understanding of Learner-Centered Teaching, I believe it enhances the ability to apply classroom learning to clinical practice more than teacher-centered learning.” Participants responded by indicating that they (1) Strongly disagreed; (2) Disagreed; (3) Agreed; or (4) Strongly Agreed with the statements. The composite variable, BELIEFS, was computed in SPSS and measured on an ordinal scale. Cumulative scores ranged from two to eight.

ELCTNEQ Variable and Subscales

The entire ELCTNEQ instrument consists of 37 questions. For the purposes of this study, the ELCTNEQ variable is the sum of responses to the 21 questions that evaluate the use of learner-centered teaching interventions. The 21 questions are divided

into four subscales: (a) Process of Guiding Students; (b) Interactive Social Context; (c) Critical Thinking; and (d) Reflection.

Content validity of the ELCTNEQ was verified by a panel of experts and an overall reliability of Cronbach's alpha .94 was reported (Ellis, 2016). Previous research using the instrument reported reliability for each of the four subscales Guiding (.89), Interactive (.76), Critical Thinking (.84), and Reflection (.87). Cronbach's alpha was calculated using data from my study's 180 participants to compare to the original results. The Guiding subscale consisted of six questions ($\alpha = .81$), the Interactive ($\alpha = .72$), Critical Thinking ($\alpha = .81$), and Reflection ($\alpha = .79$) subscales consisted of five questions each. Results from my study are consistent with those reported by Ellis (2016) and demonstrate internal consistency and reliability.

SUCCESS Variable

Participants were asked to report the percent of students that successfully completed the course by earning a passing grade (0-100%) in the class referenced while completing the ELCTNEQ. The SUCCESS variable was measured on a continuous, interval level. Responses ranged from 40% to 100%.

IDENTITY Variable

Participants were asked to indicate which label they would choose for themselves among the following options: (1) Teacher-centered; (2) Somewhat Teacher-centered; (3) Somewhat Learner-centered; or (4) Learner-centered. The IDENTITY variable was measured on an ordinal scale.

Results

The purpose of the first research question of my study was to determine if there was a relationship between an educator's use of SCALS and the percent of students that successfully complete the course by earning a passing grade. The dependent variable, or outcome, was the percent of students that successfully complete the course by earning a passing grade as reported by the instructor. The independent variable, or predictor, was the use of active learning strategies identified by a composite score of responses on the ELCTNEQ instrument. This composite variable, called ELCTNEQ, was computed in SPSS. Table 2 shows the descriptive statistics for Student Success rates and ELCTNEQ composite scores.

Table 2

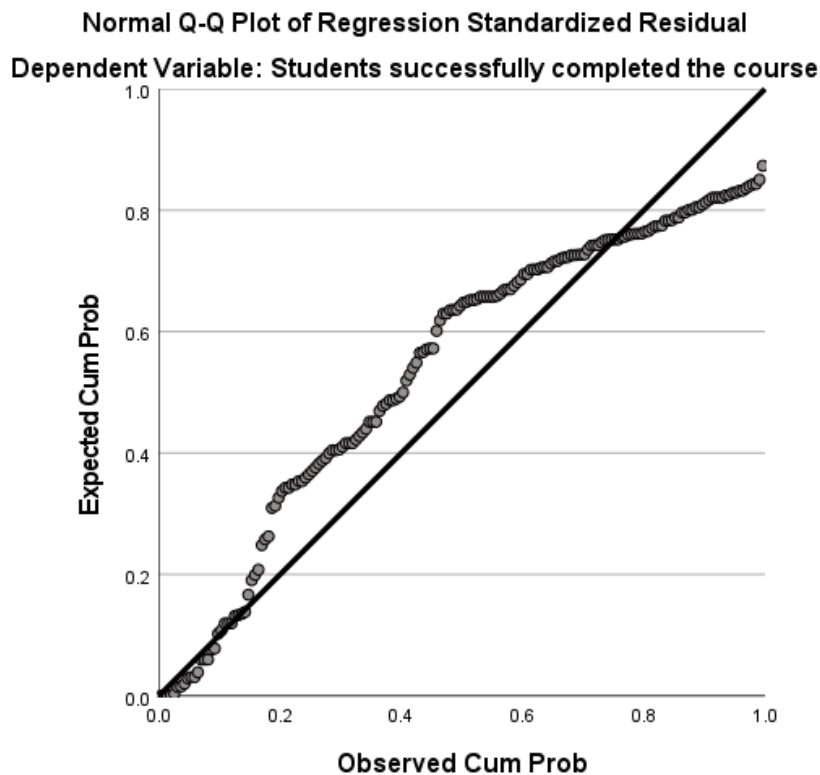
Descriptive Statistics for SUCCESS and ELCTNEQ

	Minimum	Maximum	Mean	Standard deviation
SUCCESS	40	100	92.08	9.48
ELCTNEQ	34	84	59.01	10.7

I conducted a simple linear regression analysis to evaluate the relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course. The assumption of normality was assessed by plotting a Quantile-Quantile (Q-Q) scatterplot. The assumption of normality is met if quantiles of the residuals do not strongly deviate from a straight line (Creswell, 2014; Grove et al., 2013). Figure 4 presents a Q-Q scatterplot of model residuals demonstrating minimal deviation.

Figure 4

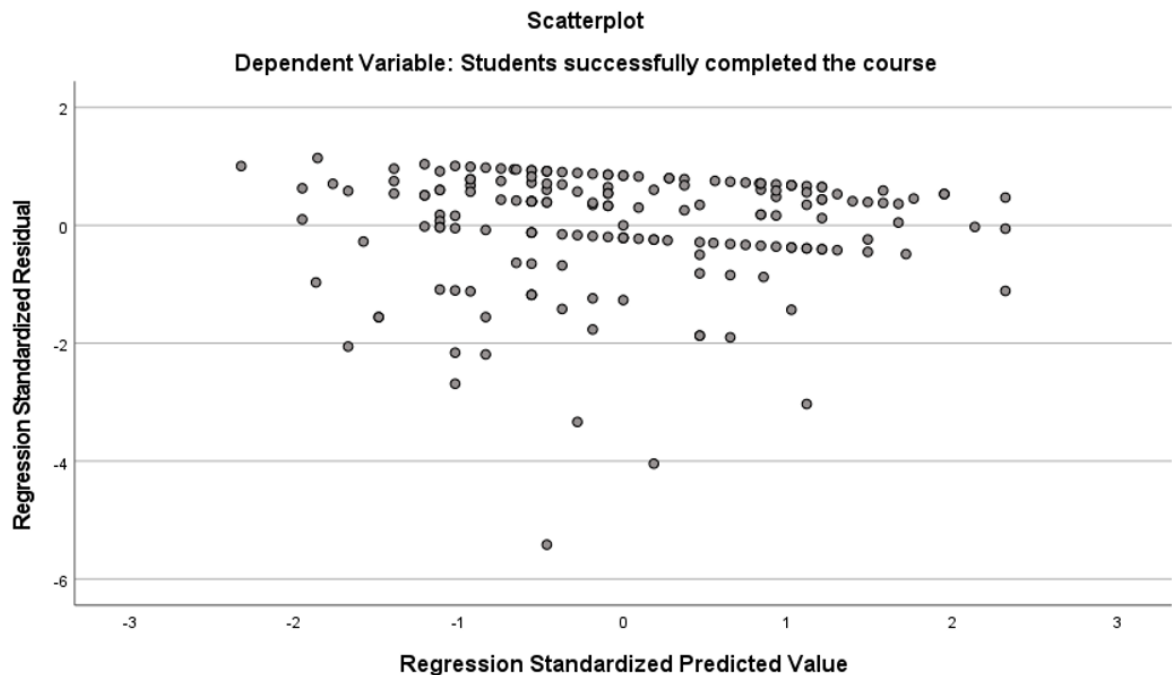
Q-Q Scatterplot for Normality



Next, the assumption of homoscedasticity was evaluated by plotting the residuals against the predicted values. The assumption of homoscedasticity is met if the points appear randomly distributed with a mean of zero and no apparent curvature (Creswell, 2014; Grove et al., 2013). Figure 5 presents a scatterplot of predicted values and model residual. The scatterplot indicates that the assumption was met.

Figure 5

Residuals Scatterplot for Homoscedasticity



Finally, the assumption of lack of outliers was assessed by calculating Cooks Distances. Observations greater than one are regarded as outliers and should be removed from the data (Creswell, 2014; Grove et al., 2013). There were no outliers present in the data.

The results of the simple linear regression analysis revealed a statistically significant association ($p < 0.0001$). The regression coefficient: $B = .141$, 95% C.I. [.011, .271] associated with the ELCTNEQ suggests that student success increases with use of active learning strategies by .141%. The R^2 value of 0.25 associated with this regression model suggests that the use of active learning accounts for 25% of the variation in student

success, which means that 75% of the variation cannot be explained by use of active learning strategies alone. The confidence interval associated with the regression analysis does not contain 0, which means the null hypothesis, there is no relationship between a nurse educator's use of SCALS and the percent of students that successfully completed the course, is rejected. For every one unit increase in ELCTNEQ scores, the percent of students that successfully complete the course will increase by .141.

Table 3

Linear Regression Analysis of ELCTNEQ and SUCCESS

	<i>B</i>	95% CI	<i>R</i> ²	<i>F</i>
Use of SCALS	1.41	[.011, .271]	0.25	0.33*

*Significant at the .0001 level of significance ($p < .0001$)

In the second research question, I examined the relationship between an educator's self-perception of their own learner-centeredness and their use of SCALS in the classroom. The dependent variable was the use of SCALS and measured using ELCTNEQ. The independent variable, IDENTITY, was a self-reported level of learner-centeredness. The null hypothesis was: there is no relationship between an educator's self-perception of their learner-centeredness and the use of SCALS. The alternative hypothesis was: There is a relationship between an educator's self-perception of their learner-centeredness and the use of SCALS.

Participants' self-perception (IDENTITY) was correlated with their use of SCALS (ELCTNEQ). Descriptive statistics for the ELCTNEQ by IDENTITY groups are presented in Table 4.

Table 4*Descriptive Statistics of ELCTNEQ by IDENTITY*

	n	Mean	Standard deviation	Standard error	95% CI for mean		Min	Max
					Lower bound	Upper bound		
Teacher-centered	3	50.96	10.5	6.06	24.88	77.05	39.89	58.0
Somewhat Teacher-centered	23	50.26	7.76	1.61	46.9	53.62	38.0	66.0
Somewhat Learner-centered	82	55.94	9.53	1.05	53.85	58.03	34.0	84.0
Learner-centered	72	65.63	9.17	1.08	63.47	67.78	4.0	84.0

I conducted a one-way ANOVA to compare the use of SCALS between groups of educators that reported themselves as being Learner-centered, Somewhat Learner-centered, Somewhat Teacher-centered, or Teacher-centered. Prior to running the one-way ANOVA, I assessed the assumptions of normality, homogeneity of variance, and lack of outliers.

I analyzed data by running a Shapiro-Wilk test of normality. The assumption is met when the p -value is greater than .05 (Creswell, 2014). Results indicate that all variables, except *Somewhat Learner-centered*, met the assumption of normality. Violations of normality are not problematic when the sample size is larger than 30 (Ghasemi, 2012; Knief et al., 2021). Therefore, it is assumed that normality was met. Table 5 shows the normality results.

Table 5*Shapiro-Wilks*

Identity	Statistic	df	Sig
Teacher centered	.828	3	.182
Somewhat teacher centered	.963	23	.523
Somewhat learner centered	.969	82	.042
Learner centered	.980	72	.322

Next, I assessed the assumption of homogeneity of variance using the Levene's test. The assumption is met when the p -value is greater than .05. Results shown in Table 6, indicate that the assumption was met.

Table 6*Levene's Test*

Variable	Levene's Statistic	df1	df2	Sig
ELCTNEQ	.562	3	176	.641

I assessed the assumption of lack of outliers by calculating Cook's Distances. Any observations that exceed one are regarded as outliers and should be removed from the data (Creswell, 2014; Green & Salkind, 2017). There were no outliers present in the data.

Participants were asked to select a label for themselves on a continuum from one (Teacher-centered) to four (Learner-centered). Responses were correlated with their ELCTNEQ scores. I conducted a one-way ANOVA to compare the use of SCALS

between groups of educators that reported themselves as being Learner-centered (40%, n=72), Somewhat Learner-centered (45.56%, n=82), Somewhat Teacher-centered (12.78%, n=23), or Teacher-centered (1.67%, n=3). Table 7 shows results of the ANOVA test.

Table 7

One-Way Analysis of Variance of ELCTNEQ and IDENTITY

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig</i>
Between Groups	5881.04	3	1960.35	23.21	< .001
Within Groups	14868.39	176	84.48		

Results indicated a positive relationship between the participant's choice of identification label and their use of SCALS. The analysis of variances revealed a statistically significant difference between groups [$F(3, 176) = 23.21, p < .001$] warranting post hoc testing. Post hoc analyses, conducted using Tukey's HSD test, revealed educators that identified as Learner-centered used SCALS more often than educators that identified as Teacher-centered ($p = .037, 95\% \text{ C.I.} = [.62, 28.71]$); Somewhat Teacher-centered educators ($p < .0001, 95\% \text{ C.I.} = [9.66, 21.01]$); and more than Somewhat Learner-centered educators ($p < .0001, 95\% \text{ C.I.} = [5.84, 13.54]$). Somewhat Teacher-centered educators used SCALS more often than Somewhat Learner-centered educators ($p = .047, 95\% \text{ C.I.} = [-11.30, -.05]$). There was no statistically significant difference in the use of SCALS between Teacher-centered educators and Somewhat Teacher-centered

educators ($p=.999$) or between Teacher-centered educators and Somewhat Learner-centered educators ($p=.794$).

Table 8

Tukey HSD Post Hoc Comparisons

		<i>95% Confidence Interval</i>				
		<i>Mean difference</i>	<i>Standard Error</i>	<i>Sig.</i>	<i>Lower Bound</i>	<i>Upper Bound</i>
(1) Teacher-centered	(2) Somewhat Teacher-centered	.70	5.64	.999	-13.93	15.34
	(3) Somewhat Learner-centered	-4.97	5.40	.794	-18.99	9.04
	(4) Learner-centered	-14.66	5.42	.037	-28.71	-.62
(2) Somewhat Teacher-centered	(1) Teacher-centered	-.70	5.64	.999	-15.34	13.93
	(3) Somewhat Learner-centered	-5.68	2.17	.047	-11.30	-.05
	(4) Learner-centered	-15.37	2.20	.000	-21.08	-9.66
(3) Somewhat Learner-centered	(1) Teacher-centered	4.97	5.40	.794	-9.04	18.99
	(2) Somewhat Teacher-centered	5.68	2.17	.047	.05	11.30
	(4) Learner-centered	-9.68	1.48	.000	-13.54	-5.83
(4) Learner-centered	(1) Teacher-centered	14.66	5.42	.037	.62	28.71
	(2) Somewhat Teacher-centered	15.37	2.20	.000	9.66	21.08
	(3) Somewhat Learner-centered	9.69	1.48	.000	5.84	13.54

In the third research question, I examined the relationship between an educator's beliefs about learner-centeredness and their use of SCALS in the classroom. The dependent variable, ELCTNEQ, reflected the use of SCALS identified by a composite score of responses on the ELCTNEQ instrument. The independent variable, BELIEFS, represents a composite score of answers to Survey Questions 19 and 20 regarding self-reported beliefs about learner-centered teaching.

I conducted a simple linear regression to evaluate the relationship between the educator's beliefs (BELIEFS) about learner-centeredness and their use of SCALS in the classroom (ELCTNEQ). Prior to conducting the second linear regression, the assumptions of normality, homoscedasticity, and lack of outliers were assessed.

The assumption of normality was assessed by plotting a Q-Q scatterplot. There were no strong deviations indicating that normality has been met (Figure 4).

Next, the assumption of homoscedasticity was evaluated by plotting the residuals against the predicted values (Figure 5). The scatterplot indicates that the assumption was met.

Finally, I assessed the assumption of outliers by calculating Cook's Distances. Any observations that exceed one are regarded as outliers and should be removed from the data (Creswell, 2014; Green & Salkind, 2017). There were no outliers present in the data.

Results of the linear regression analysis were found to be statistically significant [$B = 1.39$, 95% C.I. (-.594, 3.73), $p < .05$], indicating that for every one unit increase in BELIEFS the use of SCALS increased by 1.39. Faculty that believed in the effectiveness

of SCALS were more likely to implement them in the classroom. The R^2 value of 0.11 associated with this regression model suggests that the predictor variable (BELIEFS) accounts for 11% of the variation in the dependent variable (use of SCALS) but 89% of the variation in the use of active learning strategies must be attributed to factors other than beliefs. As shown in Table 10, the confidence interval associated with the regression analysis does not contain zero, which means the null hypothesis, there is no relationship between a nurse educator's beliefs and the use of SCALS, is rejected and the alternative hypothesis is retained).

Table 9

Linear Regression Analysis of ELCTNEQ and BELIEFS

	<i>B</i>	95% CI	R^2	<i>F</i>
BELIEFS	1.39	[-.594, 3.73]	0.11	0.169*

*Significant at the .0001 level of significance ($p < .0001$)

Summary

Data were collected from November 1, 2021, through March 5, 2022. When data collection ended, 193 responses had been received. Power analysis (power .80, alpha .05, medium effect size) indicated a minimum of 180 responses would be required to establish meaningful results, so the sample size was adequate.

The first research question addressed the relationship between the participant's use of SCALS in an undergraduate nursing classroom and the percent of students that successfully completed the course. I conducted a simple linear regression to examine the relationship between the use of SCALS and student success in the course. Results

indicated for every one unit increase in ELCTNEQ scores, the percent of students that passed the course increased by 1.41.

The second research question examined the relationship between the participant's self-perception of learner-centeredness and their use of SCALS. Analysis of variances showed that an educator's self-perception of their own learner-centeredness had a statistically significant, positive correlation with the use of SCALS in the classroom.

For the third research question, I conducted a simple linear regression to evaluate the relationship between the educator's beliefs (BELIEFS) about learner-centeredness and their use of SCALS in the classroom (ELCTNEQ). Results indicated that for every one unit increase in BELIEFS the use of SCALS increased by 1.39.

In chapter 5, I provide conclusions based on the results and recommendations for future research. Potential implications for positive social change are also discussed.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

Problems with low NCLEX-RN pass rates, challenges associated with transition to practice, and a growing shortage of nurses have precipitated a turning point in educational practices. The need for new graduates to demonstrate a higher level of critical thinking has been cited throughout the literature (Benner et al., 2010; Ellis, 2016; Fero et al., 2008; Goers et al., 2022; Gorski et al., 2015; IOM, 2010; NCSBN, 2022; Schmidt, 2010). More than ever, the complex and evolving nature of healthcare requires nurses to critically think and demonstrate sound clinical judgment to provide safe and effective patient care and nurse educators have been called to transform the way in which nurses are prepared for practice. Various strategies have been implemented over the last decade with limited research into their effectiveness.

I conducted this study to examine the use of SCALS in undergraduate nursing classrooms. Using the ELCTNEQ instrument, data were gathered from nurse educators to quantify the use of various classroom strategies, determine the percent of students that passed the course, and measure self-perceived levels of student/teacher-centeredness and beliefs on the effectiveness of student/learner-centered methods. Analysis of the data showed a statistically significant and positive correlation between the use of SCALS and student success. Additionally, the beliefs and perceptions of faculty were found to be directly related to how much they implemented SCALS that ultimately affected student success.

Interpretation of the Findings

The relationships I identified between faculty beliefs, self-perceptions, use of various identified strategies, and student success are consistent with the recommendations supporting the use of SCALS found throughout current literature (Bristol et al., 2019; Ellis, 2016; Jensen et al., 2017). My findings are also consistent with other studies that explored application of SCALS in math, science, organizational development, and computer technologies (Battle & Tyson, 2018; Dear, 2017; Dong et al., 2019; Hannafin & Hannafin, 2010; Hwang, 2021; Rodriguez, 2012; Wu et al., 2012). Student-centered instructional designs were found to increase academic performance, knowledge, improve logical reasoning, increase critical thinking, retention, and accountability (Dong et al., 2019; Duane & Satre, 2014; Kamii & Ewing, 1996), foster acquisition of clinical skills and competencies, and promote critical thinking (Goers et al., 2022; Kaplan et al., 2017).

The results of this study also show that a teacher's beliefs and whether they identify as student or learner-centered affect the types of educational strategies used in the classroom. Interestingly, it was found that an educator's self-perceptions about their own learner-centeredness had less of an effect than their beliefs about the effectiveness of the strategies on the use of these interventions in the classroom. Essentially, an instructor that considered themselves to be teacher-centered in practice, but believed in the benefits of SCALS, was just as likely to implement the practices as an instructor that considered themselves to be student-centered in practice. Furthermore, the use of SCALS was shown to affect student success in the course thereby providing additional evidence supporting ongoing faculty training and use of SCALS.

The use of classroom activities that align with Bruner's (1977) theory of constructivism and encourage students to actively participate in the learning process were found to be positively correlated with the percent of student's that successfully complete the course. A central tenet of the constructivist theory encourages the implementation of teaching and learning strategies that facilitate the construction of knowledge (Blumberg, 2019; Brandon & All, 2010; Brunner, 1977; Duane & Satre, 2014; Swanson et al., 2019; Waltz et al., 2014; Xu & Shi, 2018). Consequently, the use of SCALS in the undergraduate nursing classroom facilitates an environment where students are motivated to actively think and apply knowledge. The specific strategies evaluated in the ELCTNEQ support the development of critical thinking skills, consolidate student learning and understanding, and establish alignment between theory and practice consistent with the theory of constructivism. The results of this study support the use of classroom activities that align with Bruner's theory of constructivism. The use of SCALS that encourage students to actively participate in the learning process was found to have a positive correlation with the percent of student's that successfully completed the course.

Limitations of the Study

The use of active learning was found to account for 25% of the variation in student success but the variation cannot be explained by use of active learning strategies alone. Extraneous factors such as age and intelligence, type of undergraduate registered nursing program, admission criteria, support systems available to the student throughout the program, work/family responsibilities, and effort put forth in the course will also have a recognizable impact on academic success.

Another possible limitation to consider is that beliefs and self-perceptions, regardless of the instrument used, are complex concepts. Errors of central tendency, the tendency to rate toward the middle of a scale to avoid rating high or low, may have influenced participants' responses and created inaccuracies in the data. Instructor's self-perception ratings may have also been influenced by their understanding of the concept of teacher/student centeredness or a lack of training or knowledge about the various strategies.

Responses that reflected low implementation rates of SCALS may have been due to administrative/institutional constraints, rather than faculty beliefs or self-perceptions. Various other reasons may have mitigated the implementation of these techniques in the classroom as well.

The use of convenience sampling posed a risk of selection bias and decreased the potential for generalization to the greater population, but it was appropriate for reaching the subpopulation of nurse educators for the purposes of this study (Lehdonvirta et al., 2021). The use of a cross-sectional survey allowed for examination of variables at a specific point in time and the ability to make inferences about the sample group and generalize the findings to the larger population (Creswell, 2014).

Recommendations

With a call to transform nursing education to train new graduates who are better prepared for successful transition to the workforce, educators and administrators are faced with a proliferation of educational products, strategies, and teaching/learning interventions all purporting an increase in student learning outcomes (Fero et al., 2008;

Kavanagh & Sharpnack, 2021; Xie et al., 2018; Xu & Shi, 2018). Findings from this study expand the knowledge base by adding insight into the use of SCALS in the undergraduate nursing classroom. Results also support the need for additional research to further examine the effectiveness and faculty motivation to implement these types of educational strategies. Given the research and discourse about various SCALS found throughout the literature, several recommendations are warranted.

Current definitions and terminology used throughout literature and previous studies on SCAL interventions are often vague and vary widely making generalization, synthesis of findings, and replication of studies difficult (Creswell, 2014; Polit & Beck, 2017; Romeo, 2010). Descriptions of educational strategies such as “flipped classroom,” “case studies,” “simulation,” “game-based learning,” “one-minute paper/summary,” and “just-in-time teaching” are often labeled differently, vary in implementation, and are rarely categorized as cohesive educational interventions. Standardization of definitions, including clarification and categorization of the concepts and various strategies would help both educators and researchers in identification, training, implementation, and research. Further research into the use and effectiveness of strategies that encourage active learning would provide evidence supporting faculty training and curriculum development.

Implications

Additional research into learning strategies will further increase the knowledge base and provide evidence to support faculty training and use of effective teaching strategies. The number of products, interventions, and resources available from various

publishers and other sources all claiming to increase learning, success on NCLEX licensure exams, and critical thinking skills has grown exponentially over the past decade in response to a growing need for knowledgeable and skilled graduates. Administrators and educators are faced with selecting strategies that improve learning, critical thinking, and application of knowledge (Bristol et al., 2019; Kavanagh & Sharpnack, 2021; Xie et al., 2018). Until active learning strategies are widely accepted and consistently implemented throughout undergraduate nursing programs, further research is needed to provide additional information about their use and evidence of their effectiveness.

The incorporation of SCALS can result in improved learning outcomes for undergraduate nursing students. Administrators must emphasize the importance of shifting the responsibility of learning from the teacher to the student and create an academic culture that fosters the development of these beliefs as well as supports the incorporation of these types of strategies throughout undergraduate curricula (Blumberg, 2019; Bowman et al., 2022; Bristol et al., 2019; Custer, 2016; Docherty et al., 2018; Ellis, 2016; Froyd & Simpson, 2010; Gorski et al., 2015; Hwang, 2021; Jensen et al., 2017; NCSBN, 2022; Polit & Beck, 2017; Slattery, 2017; Swanson et al., 2019). To facilitate successful implementation, training on student-centered, active teaching that is consistent with the constructivist theory should include evidence-based strategies and resources to build awareness and confidence among faculty and students alike.

Nurses can affect positive social change by conducting research that expands the base of educational practice knowledge. Research will help to identify and support evidence-based practices to facilitate successful transition to practice and improved

patient outcomes which contributes to positive social change at individual, family, and community levels (Alameida et al., 2011; Battle, 2018; Benner et al., 2010; Bristol et al., 2019; Bryer & Peterson-Graziose, 2014; Custer, 2016; Docherty et al., 2018; Faulcon, 2015; Gorski et al., 2015; Hwang, 2021; Kavanagh & Sharpnack, 2021; NCSBN, 2022).

Conclusion

In the search to improve student learning outcomes and better prepare graduates for transition to practice, nurse educators must implement strategies that increase student learning. To do so, the effectiveness of interventions used in the undergraduate nursing classroom needs to be better understood and best practices identified. Teaching strategies must be explored through research that facilitates understanding of the concepts, roles of the teacher and the students, and overall effects on learning.

A nursing instructor's beliefs and self-perceptions affect how they incorporate SCALS that ultimately influence student success. Administrators can support faculty by providing training and creating an environment that encourages faculty to incorporate activities that allow students to actively engage in the learning process.

The call to transform nursing education must be answered with incorporation of evidence-based interventions throughout the curriculum. Improving the quality of education will facilitate the development of skilled nurses ultimately contributing to improved patient outcomes. Identification of effective educational practices will help to ensure future generations of nurses are better prepared to provide safe, efficient, and competent patient care.

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Appendix A: Survey Invitation, Consent, and Screening Form

SAMPLE SURVEY INVITATION EMAIL

You are invited to participate in a research project investigating the use of active learning in nursing education because you taught in an undergraduate registered nursing program within the past two years.

Your participation in this research study is voluntary. If you decide not to participate in this study or if you withdraw from participating, you will not be penalized.

The online survey will take approximately 20 minutes to complete. All data is stored in a password protected electronic format. To help protect your confidentiality, the surveys do not require any information that will personally identify you. The survey questions will ask about your beliefs, perceptions, and experiences with active learning strategies in a face-to-face class that you taught. You will also be asked to report the percent of students that successfully completed the course. The findings of this research study will provide evidence surrounding the use of active learning strategies in nursing programs and assist in supporting best educational practices for future nursing students.

If you have any questions about the research study, please do not hesitate to contact me directly. This research study has been reviewed and approved according to Walden University IRB procedures for research involving human subjects.

Click the link below to begin the survey.

ONLINE RESEARCH OPPORTUNITY

NURSE EDUCATORS ARE INVITED TO SHARE INFORMATION REGARDING THEIR EXPERIENCES WITH STUDENT-CENTERED, ACTIVE LEARNING STRATEGIES TO ASSIST IN IDENTIFICATION OF BEST TEACHING PRACTICES

PARTICIPANTS ASSIGNED TO TEACH A FACE-TO-FACE NURSING THEORY CLASS WITHIN THE PAST TWO YEARS ARE ASKED TO COMPLETE AN ONLINE SURVEY THAT WILL TAKE APPROXIMATELY 20-30 MINUTES.

[CLICK HERE TO PARTICIPATE](#)

THIS SURVEY IS PART OF A DOCTORAL STUDY CALLED "RELATIONSHIP BETWEEN STUDENT-CENTERED, ACTIVE LEARNING STRATEGIES AND STUDENT SUCCESS IN AN UNDERGRADUATE NURSING COURSE" CONDUCTED BY CAMDEN SEAL, PH.D. RN, A PH.D. STUDENT AT WALDEN UNIVERSITY. QUESTIONS MAY BE DIRECTED TO CAMDEN.SEAL@WALDEN.EDU

ACADEMIC SUCCESS

FACULTY BELIEFS

FACULTY PERCEPTIONS

USE OF STUDENT-CENTERED, ACTIVE LEARNING STRATEGIES

Appendix B: Permission to Use Diagram of Teacher-Centered and Student-Centered

8/9/22, 8:00 PM Mail - Camden Seal - Outlook

Re: Request for permission to use diagram

Jon Cornwall [REDACTED]
 Tue 8/9/2022 7:57 PM

To: Camden Seal [REDACTED]
 Kia ora, Camden.

Thank you so much for reaching out regarding this diagram. I have no problem with you reproducing this as part of your work.

Nga mihi nui,

Jon

Jon Cornwall
 Education Advisor and Senior Lecturer
DipPhy, BSc(Physiol), MSc(Anat), DMPHy, PGCertTertT, PhD
 Te Pokapū Aurorotanga / Centre for Early Learning in Medicine
 Te Kura Hauora o Ōtākou / Otago Medical School
Te Whare Wānanga o Ōtākou / University of Otago
Ōtepoti / Dunedin
 [REDACTED]

Affiliate – Bioethics Centre, University of Otago
 Bioethics free resources: [Anatomy Ethics and Professionalism Education Resources](#)

From: Camden Seal [REDACTED]
Date: Wednesday, 10 August 2022 at 11:34 AM
To: Jon Cornwall [REDACTED]
Subject: Request for permission to use diagram

Good evening Dr. Cornwall,

My name is Camden Seal. I am a doctoral student at Walden University. I am writing to request permission to use the diagram below (from <https://www.otago.ac.nz/oms/otago831825.pdf>) in my dissertation on the use of student-centered, active learning strategies in the undergraduate nursing classroom. I look forward to hearing from you at your earliest convenience. Thank you in advance for your time and consideration.

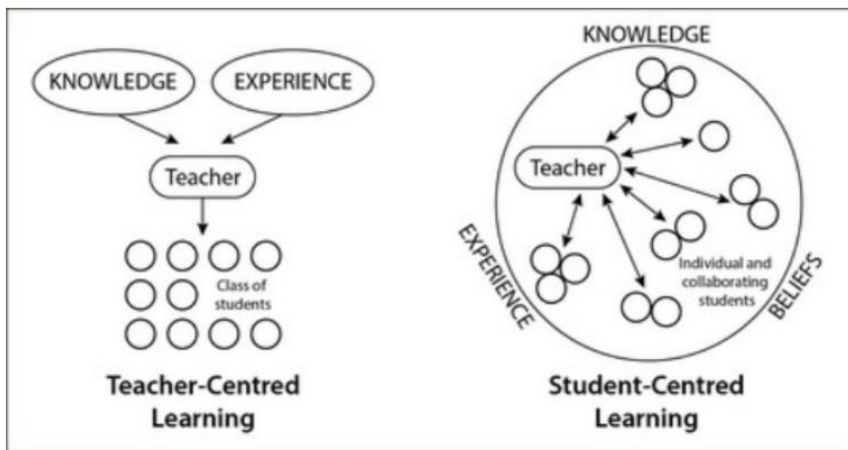
Sincerely,
 Camden

<https://outlook.office.com/mail/inbox/id/AAMkAGZiODkxODlwLTc3MGEiNGRjZS05ZWizLWRjJG9jODc4MgBGAAAAAACN11jq5gSPRo3lMrtXq2j...> 1/2

Classrooms

8/9/22, 8:00 PM

Mail - Camden Seal - Outlook



Appendix C: Permission to Use the Ellis Learner-Centered Teaching in Nursing

Education Questionnaire (ELCTNEQ)

Re: Request to use ELCTNEQ for research study

On Jun 30, 2019, at 12:53 PM, Camden Seal [redacted] wrote:

June 8, 2019

D. Michele Ellis

[redacted]

Dr. Ellis:

I am a doctoral student from Walden University writing my dissertation on the use of student-centered, active learning strategies in undergraduate nursing education. I read your 2016 article *The Role of Nurse Educator's Self-Perception and Beliefs in the Use of Learner-Centered Teaching in the Classroom* and I'm very interested in possibly using the ELCTNEQ instrument in my research study. I'm writing to request a copy of the instrument for review. In addition, please let me know if there would be any conditions around it's use.

If you have any questions or concerns, I can be reached through this email address. Thank you in advance for your consideration and I look forward to hearing from you at your earliest convenience.

Sincerely,
Camden Seal, MSN RN
Doctoral Candidate, Walden University

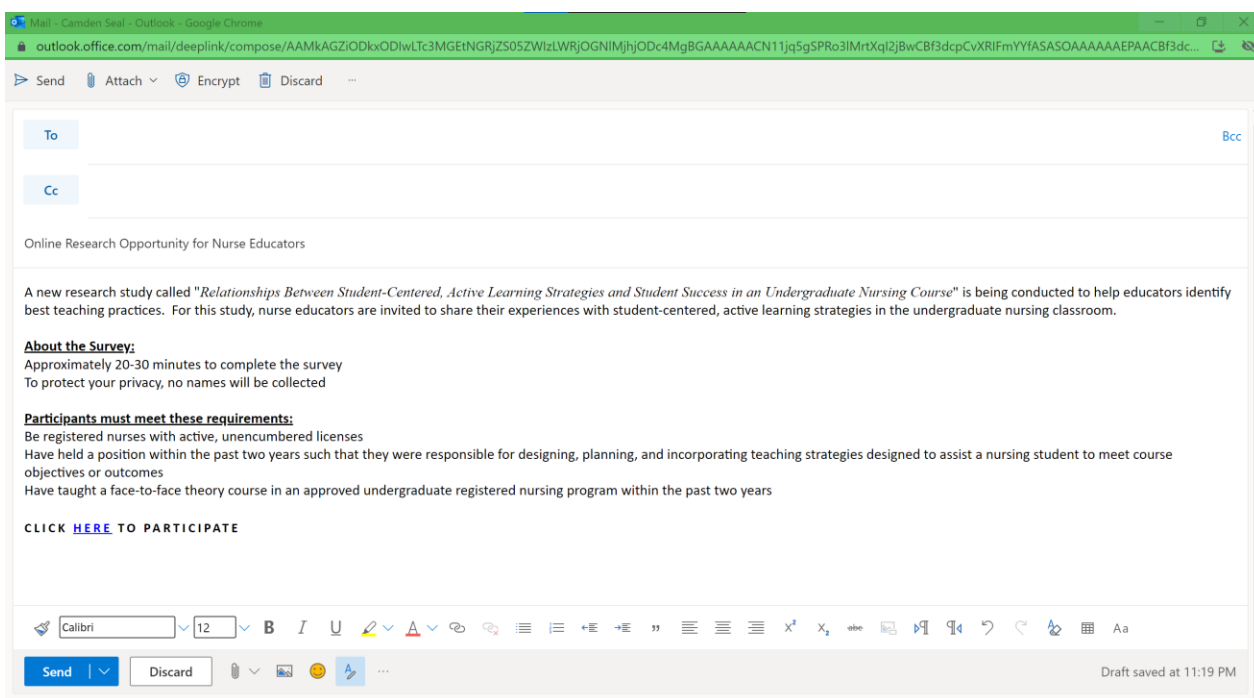
From: Donna Ellis [redacted]
Sent: Thursday, July 18, 2019 5:58 PM
To: Camden Seal [redacted]
Subject: Re: Request to use ELCTNEQ for research study

Hello Camden,

I apologize for the delay in answering you. Yes, of course you can use it. Two conditions: give me credit (of course), and send me a copy of the results!

Sincerely,
Dr. Ellis

Appendix D: Sample Email Invitation and Recruitment Flyer



ONLINE RESEARCH OPPORTUNITY

NURSE EDUCATORS ARE INVITED TO SHARE INFORMATION REGARDING THEIR EXPERIENCES WITH STUDENT-CENTERED, ACTIVE LEARNING STRATEGIES TO ASSIST IN IDENTIFICATION OF BEST TEACHING PRACTICES

PARTICIPANTS ASSIGNED TO TEACH A FACE-TO-FACE NURSING THEORY CLASS WITHIN THE PAST TWO YEARS ARE ASKED TO COMPLETE AN ONLINE SURVEY THAT WILL TAKE APPROXIMATELY 20-30 MINUTES.

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